PAINT and VARNISH Production

IE TECHNICAL MAGAZINE FOR MANUFACTURERS OF PAINT, VARNISH, LACQUER AND OTHER SYNTHETIC FINISHES

WHAT HAVE WATER AND SAND TO DO WITH PAINT DRIERS?

Water and Sand in the form you see them in the photograph have very little to do with driers, but in other forms, they serve to point up two big uses of our Hexogen (Octoate) Driers.

1) Water, in the form of humidity, slows down the drying of paint. However, reports from our customers indicate that Advance Hexogens outperform naphthenates and other driers in drying paint in humid weather. In fact, on the Gulf Coast (where it really gets humid) many manufacturers have adopted Hexogens to assure better performance and customer satisfaction in this regard.

2) Beach sand carries a high percentage of silicon. And silicon is one of the elements found in silicone—a resin gaining an increasing amount of popularity for finishes. Since these compounds are complex, and in some cases require special care, we suggest you get our specific recommendations and try Hexogens. We have had good results with our Hexogens in these silicone resin finishes.

Advance Hexogen Driers, available as Lead 24%, Cobalt 6%, Manganese 6%, Zinc 8%, Calcium 4%, and concentrates of these metals, have other plus features. They are Od-R-Free and extremely effective under almost any conditions.

It will pay you to investigate the Hexogens.

For your free samples and recommendations, write ADVANCE Solvents & Chemical Corp., 245 Fifth Avenue, New York 16, N. Y.

ADVANCE SOLVENTS & CHEMICAL CORP.

For top
alkali-and-abrasion resistance
in a highly flexible coating,
formulate with RCI's

P-786 BECKOSOL

As a vehicle for tin decorating enamels, collapsible tube finishes, can and cap coatings, roller coating enamels, and washing machine primers and top coats, it's hard to beat Reichhold's P-786 BECKOSOL.

This epoxy resin ester forms a rubbery, flexible film which resists both alkalis and abrasion. Enamels formulated with P-786 dry rapidly . . . possess excellent color retention, gloss and hardness . . . withstand humidity, heat, detergents, hot and cold water.

For complete information, write for Technical Bulletin SC-5.

REICHHOLD CHEMICALS, INC. | 525 NORTH BROADWAY, WHITE PLAINS, N.Y.

REICHHOLD

RCI

Creative Chemistry . . .
Your Partner
in Progress

Gel roller of tube coating machine at Sun Tube Corporation, Hillside, N. J., covers collapsible tubes with resin-base finish.

Synthetic Resins
Chemical Colors
Phenol
Glycerine
Phthalic Anhydride
Maleic Anhydride
Sodium Sulfate
Sodium Sulfite

PAINT and VARNISH Production

(REG U.S PATENT OFFICE)
Formerly PAINT and VARNISH PRODUCTION MANAGER
(Established in 1910 as The Paint and Varnish Record)

VOL. 44 DECEMBER, 1954 NO. 12

FEATURES

DEPARTMENTS

Published Monthly by
Powell Magazines, Inc.
Executive and Editorial Offices
855 Ave. of Americas
New York 1, N. Y.
BRyant 9-0499

MEMBER BUSINESS BPA PUBLICATIONS AUDIT, INC.

PAINT and VARNISH PRODUCTION is published monthly at Easton, Pa. by Powell Magazines, Inc. John Powell, president; Ira P. MacNair, vice-president and treasurer; Alice L. Lynch, secretary. Entered as second class matter at Post Office at Easton, Pa., Jan. 30th, 1952, under the Act of March 3, 1879. Subscription rates: United States and Possessions, $3.00 a year, $5.00 for two years, $10.00 for five years. Single copies 50c each. Canada, $4.00 a year. Pan American Countries, $4.00 a year. All other countries $8.00. Editorial and business office: 855 Avenue of the Americas, New York 1, N. Y. BR-9-0499.

**Use your present equipment . . .
open or closed kettles . . . and produce
at competitive prices a superior wall paint with . . .**

Now you can add a high quality, odorless flat wall paint to your line without buying special processing equipment. You build your own vehicle *right from the resin* at substantial savings over a purchased vehicle. You can offer your customers a many-ways-better paint at competitive prices.

- ***Excellent Adhesion***
- ***Good Leveling Qualities***
- ***Uniform One-Coat Coverage***
- ***Unlimited Range of Colors***
- ***Good Holdout***
- ***Superior Washability***

Write for the technical bulletin on odorless wall paint today and be the first in your area to take advantage of this new Shell Chemical development.

SHELL CHEMICAL CORPORATION
CHEMICAL PARTNER OF INDUSTRY AND AGRICULTURE
380 Madison Avenue New York 17, New York

Atlanta • Boston • Chicago • Cleveland • Detroit • Houston • Los Angeles • Newark • New York • San Francisco • St. Louis
IN CANADA: Chemical Division, Shell Oil Company of Canada, Limited • Montreal • Toronto • Vancouver

Editorial Comment

December, 1954

Making Paint Easy to Buy

BEFORE the Trade Sales Manufacturers' Forum held at the recent National Association convention in Chicago, J. Harold Kolseth of the Devoe and Raynolds Company presented some worthwhile tips for paint manufacturers in order that they may help their dealers to sell more paint.

Mr. Kolseth pointed out that paint gallonage has not kept pace with either the growth of population or purchasing power. Elaborating on this point he said—

"Paint today is a better value and easier to use than most potential customers realize. However, paint is not so durable and so good that the total potential market has contracted. Why then, isn't paint consumption larger?"

Two reasons given for this lag in paint consumption are: (1) Frequency of interior painting and, to a lesser degree, exterior painting is definitely a postponable maintenance decision; (2) proportionately higher application costs have been found to be a deterrent factor to more frequent paint use.

Since technology in the paint industry has made paint easier to use, Mr. Kolseth urges sales managers to develop a merchandising program which will make paint easier to buy, and said—

"Buying paint should not require experience, unusual technical knowledge, or customer inconvenience. If we accomplish that objective we will automatically make paint easy to sell."

In this connection, Mr. Kolseth set forth a few questions on the easy-to-buy checklist which we feel paint manufacturers can employ to advantage in their merchandising programs:

1. Does the paint package convey the purpose, quality and beauty of the product? 2. Does the paint package answer specific user questions, without requiring the assistance of a trained sales clerk? 3. Are instructions for use so simple and understandable that the average, or even inexperienced, customer will have sufficient confidence to use the product? 4. In your merchandising program, have you helped customers overcome natural inhibitions in the use of new materials or unusual colors? 5. Is a wide range of popular fashion colors immediately available from the average dealer's stock? 6. Is your product available in fast-growing suburban shopping areas, and does that suburban outlet give customers the scope of selection and price coverage needed?

Creative Imagination

IN delivering the Sixth Mattiello Lecture, a feature of the recent Federation Meeting in Chicago, Dr. James Scott (Shorty) Long prefaced his remarks by saying—

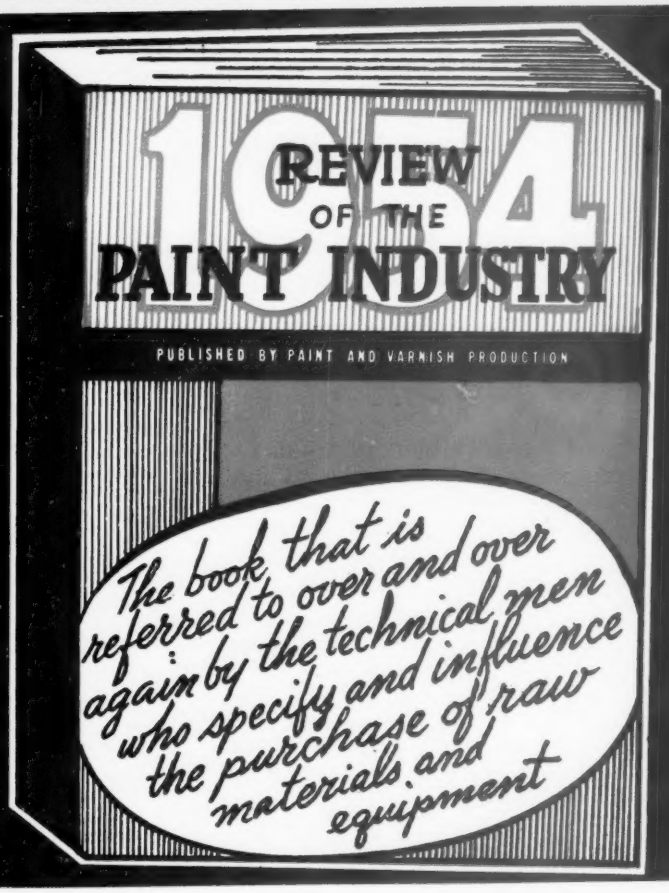
"This is not a talk, it is a memorial to the creative imagination of Joseph J. Mattiello."

Dr. Long pointed out that creative imagination in today's paint laboratory as exemplified by Dr. Mattiello is lacking because too many of chemists and technica men are wrapped up in their daily chores an do not find the time to consider the theoretical aspects of film structure in formulating paints.

"We must think and use our imagination to design a paint film that will withstand all stresses and strains," he said.

Elaborating further, Dr. Long pointed out that the organic polymeric structural arrangement of protective films is the key to built-in strength and toughness as well as chemical resistance. Similarly such objectives as overcoming ghosting, poor washability, excessive film porosity, and poor color uniformity, etc. can be attained if one considers such theoretical factors as film continuity, "free oil", pigment particle size, shape and distribution in the design of the paint film itself.

With such an approach and the willingness to work hard enough, it is Dr. Long's prediction that coating with 50 to 100 years durability will be posssible, permanently non-corrosive protection for metals, low cost finishes through the medium of coated inert pigment particles, and a complete solution to the moisture peeling problem.



NOW MORE THAN EVER ..the biggest advertising "BUY" OF THE YEAR!

NEW Directory Section makes the annual "Review" the industry's daily BUYING GUIDE

A One-Volume Digest of the Technical and Commercial Developments of the Year

. . .comprising a report, in meticulous detail, on the progress of the industry. . .in raw materials, production techniques, test methods, government specifications, patent references, technical books, business trends.

A Comprehensive Buying Guide

A new section in the 1954 "Review" will be devoted to an authentic directory of suppliers and services to the industry. . .the only comprehensive compilation of sources of raw materials and equipment, in this industry! Included in this section will be a compendium of trade names for quick location of the makers of well known products used by paint manufacturing plants.

HAND PICKED CIRCULATION OF TOP INDUSTRY BUYERS

Four thousand copies of the 1954 "Review" will go to the selected technical and production men in 1900 individual paint, varnish and lacquer plants. . .the technical directors, chief chemists, plant superintendents, production managers, research and development personnel. . . the men who select, who specify, who buy! They are the men who must have this publication at their elbows for constant daily reference on all technical matters and on sources of supply.

ADVERTISING RATES

Full Page	$200
2/3 Page	175
Island 1/2 Page	150
Regular 1/2 Page	125
Quarter Page	75

Standard Color $50. Match Color $75. Bleed $35.

RESERVE SPACE NOW FOR THE HARD SELLING AHEAD!

Forms Close Jan. 15th 1955

Fill in — Cut out — and Mail this RESERVATION BLANK — today!

Powell Magazines, Inc.,
855 Avenue of the Americas,
New York 1, N. Y.

Date .....

Reserve ..... page(s) in the 1954 edition of the "Review of the Paint Industry."

Name .....

Company .....

Address .....

City & State .....

POWELL MAGAZINES, INC. 855 AVENUE OF THE AMERICAS, NEW YORK 1, N.Y.

WHAT'S THE DIFFERENCE?

n-butyl acetate

vs.

isobutyl acetate

The only REAL DIFFERENCE to you may be their COST

Are you cashing in on the savings that isobutyl acetate can bring you?

Many lacquer manufacturers are. In their lacquer thinner formulations, *n*-butyl acetate and other solvents are being successfully replaced in part or entirely with lower-priced isobutyl acetate.

For example, in the widely used federal specification thinner TT-T-266a, the use of isobutyl acetate has resulted in a 4% savings in material costs. The use of isobutyl acetate in this thinner and the resulting savings is typical of a number of formulations prepared and tested in our laboratories.

In many plants, deliveries of isobutyl acetate are being made directly into the tanks formerly used for *n*-butyl acetate. These companies are making an extra profit on every gallon of lacquer that leaves their plant.

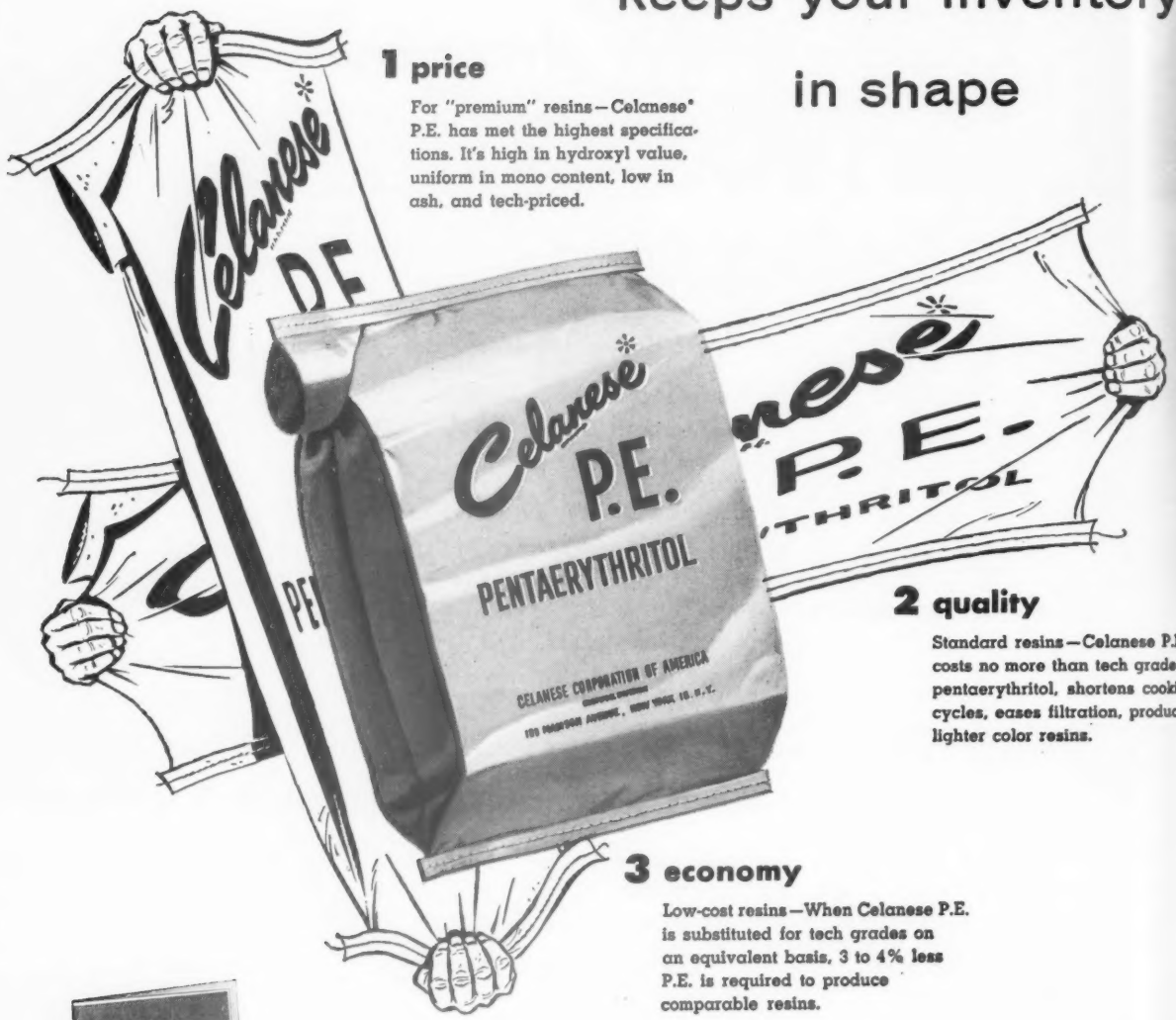
Today, Eastman isobutyl acetate is finding wide acceptance as a lacquer solvent in its own right as well as a satisfactory replacement for *n*-butyl acetate. Its quality is uniformly high. Its price is low and stable.

For detailed information on how this Eastman solvent can reward formulators interested in exploring new ways to cut costs, write to Eastman Chemical Products, Inc., Chemicals Division, Kingsport, Tennessee.

Eastman
CHEMICAL PRODUCTS, INC.
KINGSPORT, TENNESSEE
Subsidiary of EASTMAN KODAK COMPANY

SALES OFFICES: Eastman Chemical Products, Inc., Kingsport, Tenn.; New York—260 Madison Ave.; Framingham, Mass.—65 Concord St.; Cincinnati—Carew Tower; Cleveland—Terminal Tower Bldg.; Chicago—360 N. Michigan Ave.; St. Louis—Continental Bldg.; Houston—412 Main St. **West Coast: Wilson Meyer Co.;** San Francisco—333 Montgomery St.; Los Angeles—4800 District Blvd.; Portland—520 S. W. Sixth Ave.; Seattle—821 Second Ave.

the pentaerythritol with the 3-way stretch keeps your inventory in shape



1 price

For "premium" resins—Celanese* P.E. has met the highest specifications. It's high in hydroxyl value, uniform in mono content, low in ash, and tech-priced.

2 quality

Standard resins—Celanese P.E. costs no more than tech grade pentaerythritol, shortens cooking cycles, eases filtration, produces lighter color resins.

3 economy

Low-cost resins—When Celanese P.E. is substituted for tech grades on an equivalent basis, 3 to 4% less P.E. is required to produce comparable resins.

"MUST READING"

The new Celanese P.E. bulletin supplies solid reasons why it pays to switch to Celanese P.E. Complete with test formulations, comparisons, and cost analyses. Please write to Dept. 558-L.

With equal emphasis today on quality, price, and inventories, Celanese P.E. is just what alkyd resin manufacturers have been looking for—an all-purpose pentaerythritol that combines higher purity and uniformity with real production economy.

Celanese Corporation of America,
Chemical Division,
180 Madison Avenue, N. Y. 16.

Celanese* CHEMICALS

*Reg. U. S. Pat. Off.

Now— a New High in Quantity and Quality

MALEIC ANHYDRIDE AND FUMARIC ACID

through the addition of this

NEW NATIONAL ANILINE PLANT *at* MOUNDSVILLE, W. VA.

Now National Aniline customers have the added advantage of dual sources of supply—Moundsville, West Virginia and Buffalo, New York—together with the single responsibility of the industry's foremost producer of Maleic Anhydride and Fumaric Acid. Makers of polyesters, alkyds, drying oils, varnish resins, core oils, etc. will benefit by this greater availability of higher-quality resin intermediates.

NEW MALEIC ANHYDRIDE "TABLETS"

Our Moundsville plant is now producing Maleic Anhydride in improved tablet form that resists degradation in handling and minimizes fines. In quality, uniformity and form, this new production sets an industry standard of excellence.

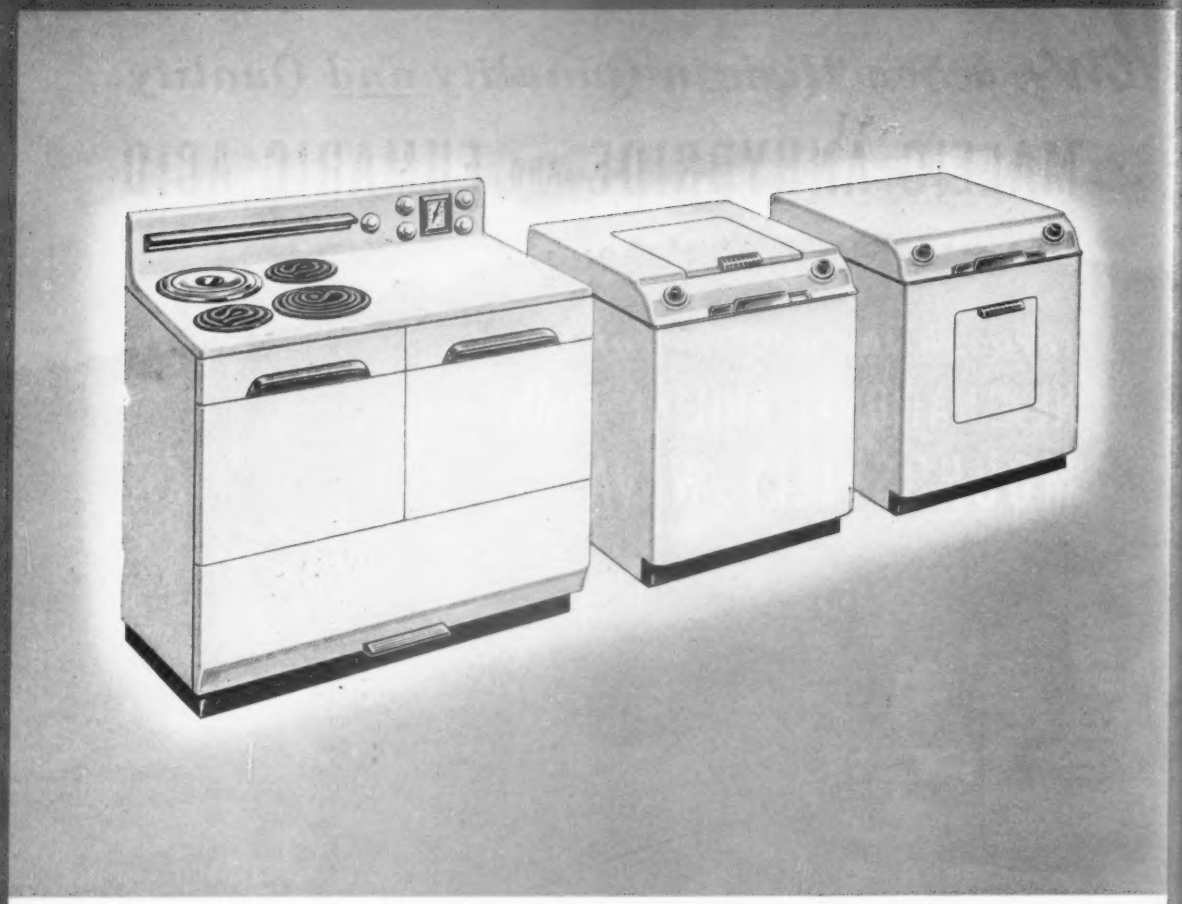
We will be pleased to submit samples, technical data and prices—for immediate delivery.

Get in touch with National Aniline for any of these Resin Intermediates, Plasticizer Intermediates or related Organic Chemicals.

- Maleic Anhydride
- Fumaric Acid
- Nadic Anhydride
- Adipic Acid
- Phthalic Anhydride
- Succinic Anhydride
- Tetrahydrophthalic Anhydride
- Hexahydrophthalic Anhydride
- Monochloromaleic Anhydride
- Malic Acid
- Maleic Acid
- Succinic Acid
- Dodecenylsuccinic Anhydride
- Meta-phenylenediamine

NATIONAL ANILINE DIVISION
ALLIED CHEMICAL & DYE CORPORATION
40 RECTOR STREET, NEW YORK 6, N. Y.

Boston Providence Philadelphia Chicago San Francisco
Portland, Ore. Greensboro Charlotte Richmond Atlanta
Columbus, Ga. New Orleans Chattanooga Toronto



Better Enamels for Industrial Finishes with UFORMITE resins

In order to fill the varying needs of coating chemists, Rohm & Haas makes thirteen UFORMITE coating resins—the widest range of nitrogenous coating resins available. These permit the formulation of special-purpose finishes possessing optimum balance of properties. We will be glad to provide you with a complete description of the merits of each of the UFORMITE resins. Meanwhile, check the properties of these two grades against your requirements:

UFORMITE MX-61. Triazine resin with high compatibility for alkyds and a tolerance for weak solvents. Improves gloss and resists attack by soap and alkalis. Typical use: washing machine enamels.

UFORMITE F-240. Urea resin with unusual toughness and wide compatibility with alkyds, varnishes, acrylic, vinyl, and alcohol-soluble resins. Typical use: automotive primers.

For manufacturers of water paints, Rohm & Haas also makes RHOPLEX AC-33, a fast-drying, odor-free acrylic resin emulsion for water paints. Write for more details.

UFORMITE *and* RHOPLEX
are trademarks, Reg. U.S. Pat. Off. and in principal foreign countries.

CHEMICALS FOR INDUSTRY

ROHM & HAAS COMPANY

THE RESINOUS PRODUCTS DIVISION

Washington Square, Philadelphia 5, Pa.

Representatives in principal foreign countries

clearly superior

owe their outstanding success to RESYN® 12K-51

PVAc paints

It pays to work with National. We have technical background and experienced specialists, who are ready to work with you in your plant and quickly set you up in the booming PVAc paint business. They'll show you these clearly superior advantages of RESYN 12K-51:

- ✓ Better quick scrubbability
- ✓ Easier tinting
- ✓ Fewer rejects due to better stability
- ✓ Permanent flexibility with resultant superior weathering properties
- ✓ Greater pigment binding strength, with consequent lower paint cost.

Polyvinyl acetate emulsion paints formulated with RESYN 12K-51 offer you definite advantages:

- ✓ Better color uniformity on nonuniform surfaces
- ✓ Easier application by brush, roller, or sprayer
- ✓ Faster recoating
- ✓ Better sealing and holdout on difficult surfaces.

Get your share of the increasingly profitable PVAc paint market. To help you, National has developed superior resins and formulations which mean easy-to-apply, trouble-free paints that make satisfied customers and repeat sales for you.

National RESYNS®

RESIN DIVISION, NATIONAL STARCH PRODUCTS INC.

Dept. D

☐ I'd like a PVAc Paint Specialist to call. I'd like to know more about the superior properties of RESYN 12K-51.

Name_____ Title_____

Company_____

Address_____

City_____ Zone____ State_____

270 Madison Ave., New York 16 • 3641 So. Washtenaw Ave., Chicago 32 • 735 Battery St., San Francisco 11 • Plainfield, N. J. • Cleveland • Los Angeles

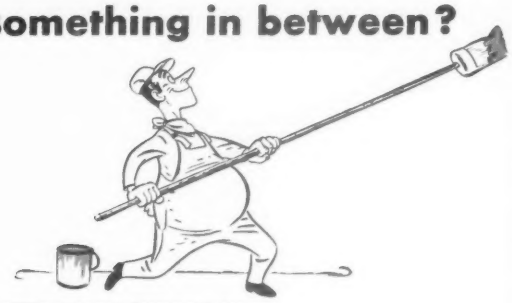
Need longer wet edge?

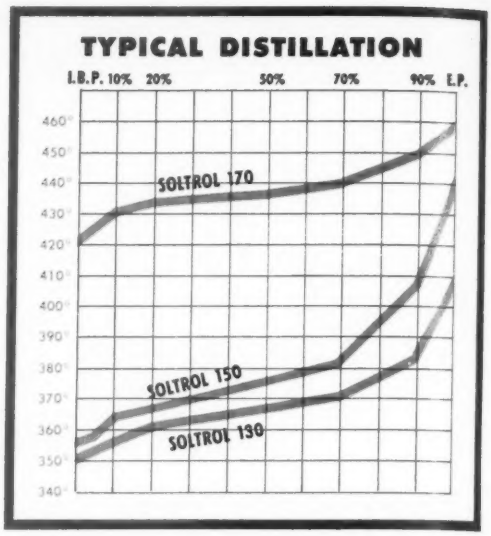
OR

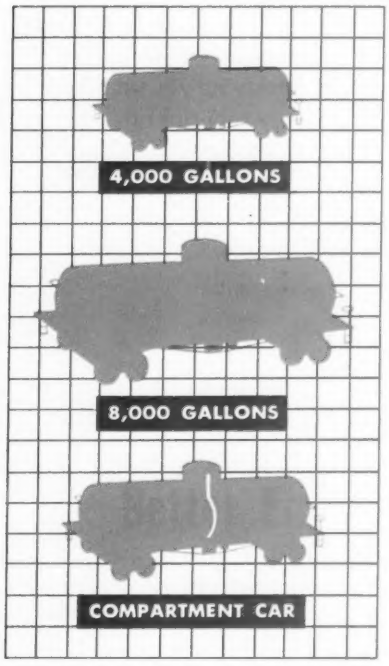
Want fast drying?

OR

Like something in between?







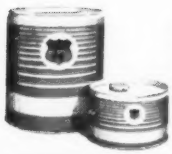
There's a correct PHILLIPS *66* SOLTROL*

for every formulation

INHERENTLY ODORLESS THINNERS

Choose the Soltrol that suits you best. All three Phillips *66* Soltrols are odorless, colorless, pure and uniform. You'll find these high quality thinners will satisfy the most critical buyer.

Order Soltrol in 4,000 or 8,000 gallon tank cars, or in compartment cars. Soltrol is available NOW for immediate shipment. Write today for complete information about these *inherently odorless* thinners.



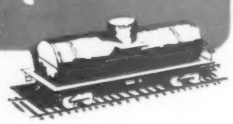
FREE TEST SAMPLES

Like to test Phillips 66 Soltrols? We'll gladly send you samples for evaluation. Just tell us how much Soltrol you need to prove to yourself the advantages of *odorless* Soltrols in your products.

ODORLESS MINERAL SPIRITS

SOLTROL*

Phillips 66



PHILLIPS PETROLEUM COMPANY
SPECIAL PRODUCTS DIVISION
BARTLESVILLE, OKLAHOMA

*A Trademark

Sharpen your Paint Formulations with Marbon "9200"®

Soluble High Styrene Paint Resins

Enjoy greater freedom in the use of reactive pigments and obtain controlled viscosity without pigment changes. The chemical inertness of the "9200" resins, along with the high film build of the LLV formulations, make them perfect for use in maintenance and anti-corrosion coatings.

Use the Specific Resin for the Specific Use!

- **MARBON "9200" HV**
  . . . for low vehicle solids at higher viscosity
- **MARBON "9200" MV and LV**
  . . . for General Use
- **MARBON "9200" LLV**
  . . . for high vehicle solids at lower viscosity

GET THE FACTS — *Write* TODAY FOR TECHNICAL LITERATURE

MARBON CORP.
GARY, INDIANA
SUBSIDIARY OF BORG-WARNER

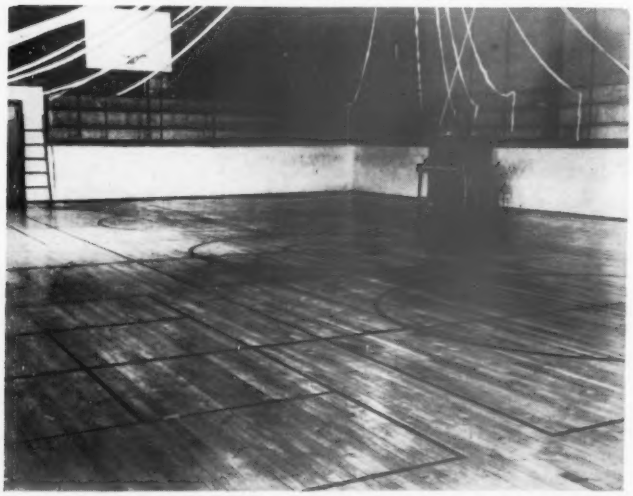
MARBON . . . Your Buy-Word for Product Perfection

The mirror-like finish on this library floor is based on BAKELITE Phenolic Resins.

You can sell
"FINISHING TIME CUT 60%"

. . . when you formulate hardwood finishes with BAKELITE Resins.

Even after four years of sports and school events, this gymnasium floor shows no sign of wear. The coating based on BAKELITE Resins did not even need spot touching up.



Tests show that:

1. finishing time *is cut* by more than 60%.

2. wear life has proved as much as 60% to 80% greater than conventional finishes.

These finishes are quick-drying . . . tack-free less than one hour after application. A complete three-coat system can be applied in less than 24 hours. That's a big selling point.

These finishes are tough, yet flexible. They're resistant to water, alkalies, acids, alcohol and many other chemicals. You offer longer wear even under heaviest traffic . . . and that's another big selling point.

Investigate. There are many proven formulations to help you build greater business.

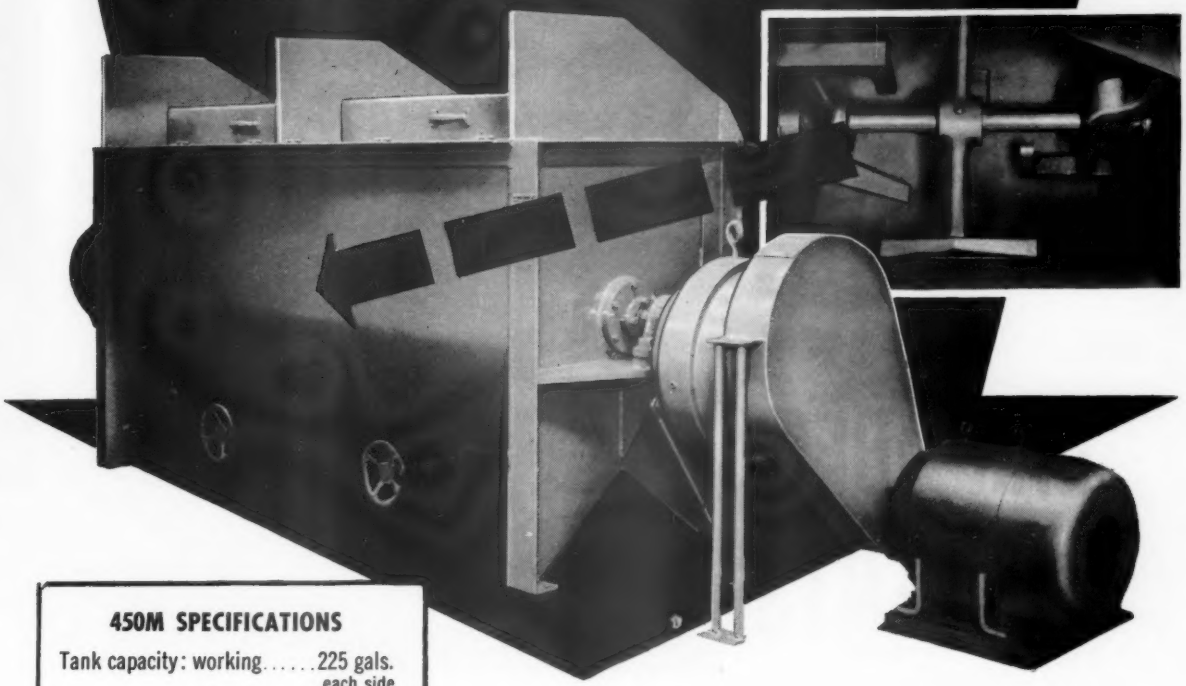
BAKELITE
TRADE-MARK
Phenolic, Vinyl, Styrene
RESINS FOR COATINGS

TRADE MARK

BAKELITE COMPANY, *A Division of Union Carbide and Carbon Corporation* UCC 30 East 42nd Street, New York 17, N.Y.

Announcing

THE NEW LEHMANN HEAVY DUTY TWIN PASTE MIXER



450M SPECIFICATIONS

Tank capacity: working.....225 gals. each side
full.....240.5 gals. each side
Total working capacity.....450 gals.
Tank size: diameter.....36 in.
length.....48 in.
Bearings: self-aligning Roller Bearing pillow blocks externally mounted
Shaft Speed: 40 RPM
Shaft Size: 2 1/16 in. dia., 5/8" x 5/16" keyway.
Drive: Roller chain, or Gearmotor with V-belt reduction.
Power required: 15 to 25 hp, depending on application.
Weight, including skids, pulleys and drives, but without motors, guards: 7000 lbs.

The new Model 450M Heavy Duty Twin Paste Mixer is designed to work in conjunction with high production mills. The two compartments mix and discharge alternately from the bottom to provide an unbroken flow of thoroughly mixed material.

This is a rapid cycle mixer. Its new paddle action was designed for optimum mixing efficiency. The unique shape and positioning of the blades produce thorough mixing action throughout the entire pigment and vehicle mass—at the ends, sides and center of the tank simultaneously. The last portion of a batch is forced by positive blade action through the center discharge opening.

Need for such a highly efficient continuous-feed paste mixer was realized upon introduction of the Lehmann Model 631-V Sight-O-Matic* Three Roll Paint Mill. While they are an unbeatable combination together, the Model 450M Paste Mixer, even when used with other mills, can be counted on to boost production.

Send for complete information and prices.

*Reg. U. S. Pat. Off.

LEHMANN®

J. M. LEHMANN COMPANY, Inc.

MAIN OFFICE AND FACTORY: 558 NEW YORK AVE., LYNDHURST, N. J.

solvents make a BIG DIFFERENCE

for

better

lacquers . . .

USE

CARBIDE'S SOLVENTS

Whether you use esters, ketones, alcohols, or glycol-ethers —the CARBIDE technical representative will give you unbiased help in selecting the best solvents for your use.

Two solvents, ethyl acetate and isopropyl acetate, are low-boiling or fast-evaporating esters that have served the lacquer industry faithfully for many years. Ethyl acetate combines high solvency with low lacquer viscosity. In addition, it has a pleasant odor. For a slower evaporating solvent, with relatively high blush resistance, choose isopropyl acetate.

for Further Information

on ethyl acetate or isopropyl acetate, ask your nearest CARBIDE office for the book "Esters" (F-4766). If you want information on all of CARBIDE'S solvents and plasticizers useful in lacquers ask for "Solvents" (F-7465). In Canada: Carbide Chemicals Sales Company, Division of Union Carbide Canada Limited, Toronto.

CARBIDE
AND CARBON
CHEMICALS

Carbide and Carbon Chemicals Company
A Division of
Union Carbide and Carbon Corporation
30 East 42nd Street UCC New York 17, N. Y.

For extreme cold weather stability... and economy, too...

NUOLATE LEAD 24% is your drier

Nuolate Lead 24%—made from highly refined tall oil acids—is stable in transit, in storage, in your plant. It flows—and is ready for instant use—even at zero temperature. You save time, you save indoor storage space and you save money, when you use this dependable drier.

Although lower in price than the naphthenates, both exhaustive tests and three years of field experience show that Nuolate Lead 24% has the same drying power per unit of metal.

Because of carefully selected raw materials and superior manufacturing techniques, Nuolate Lead 24% is milder in odor, paler in color and has less thinning action on paints.

What's more, Nuolate Lead 24% is suitable for use in combination with Nuolate Cobalt 6%, Nuolate Manganese 6%, and Nuolate Calcium 4%—in preparing mixed driers for plant use. With Nuolates, you can prepare stock mixtures with the assurance of complete stability.

Contact your Nuodex Representative for working samples, service data and specifications.

NUODEX

NUODEX PRODUCTS CO., INC., Elizabeth, N. J.

Plants in Elizabeth, N. J., Newark, N. J., Long Beach, Calif., and throughout the world

A SUBSIDIARY OF HEYDEN CHEMICAL CORPORATION

SEE YOUR REGULAR NUODEX REPRESENTATIVE

CALIFORNIA, Los Angeles
Nuodex Products Co., Inc.

CALIFORNIA, San Francisco
Cole & DeGraf

COLORADO, Denver
Thompson-Hayward Chemical Co.

GEORGIA, Atlanta
R. T. Hopkins

ILLINOIS, Chicago
J. W. Van Tuin Company

INDIANA, Indianapolis
Indiana Naval Stores Co.

IOWA, Davenport
Thompson-Hayward Chemical Co.

IOWA, Des Moines
Thompson-Hayward Chemical Co.

KANSAS, Wichita
Thompson-Hayward Chemical Co.

KENTUCKY, Louisville
B. H. Boyet & Company

LOUISIANA, New Orleans
Thompson-Hayward Chemical Co.

MASSACHUSETTS, Allston
D. H. Litter Co., Inc.

MICHIGAN, Detroit
Baker & Collinson

MINNESOTA, Minneapolis
Thompson-Hayward Chemical Co.

MISSOURI, Kansas City
Abner Hood Chemical Company

MISSOURI, St. Louis
J. E. Niehaus & Co.

NEBRASKA, Omaha
Thompson-Hayward Chemical Co.

NEW YORK, Buffalo
Commercial Chemicals Inc.

NEW YORK, New York
D. H. Litter Co., Inc.

OHIO, Cincinnati
B. H. Roettker Company

OHIO, Cleveland
A. C. Mueller Co.

OKLAHOMA, Oklahoma City
Thompson-Hayward Chemical Co.

OKLAHOMA, Tulsa
Thompson-Hayward Chemical Co

OREGON, Portland
Fred E. Alsop & Co.

PENNSYLVANIA, Philadelphia
Harry W. Gaffney

PENNSYLVANIA, Pittsburgh
John D. Butts

TENNESSEE, Memphis
Thompson-Hayward Chemical Co.

TENNESSEE, Nashville
Post Brokerage Company

TEXAS, Dallas
Thompson-Hayward Chemical Co.

TEXAS, Houston
Thompson-Hayward Chemical Co.

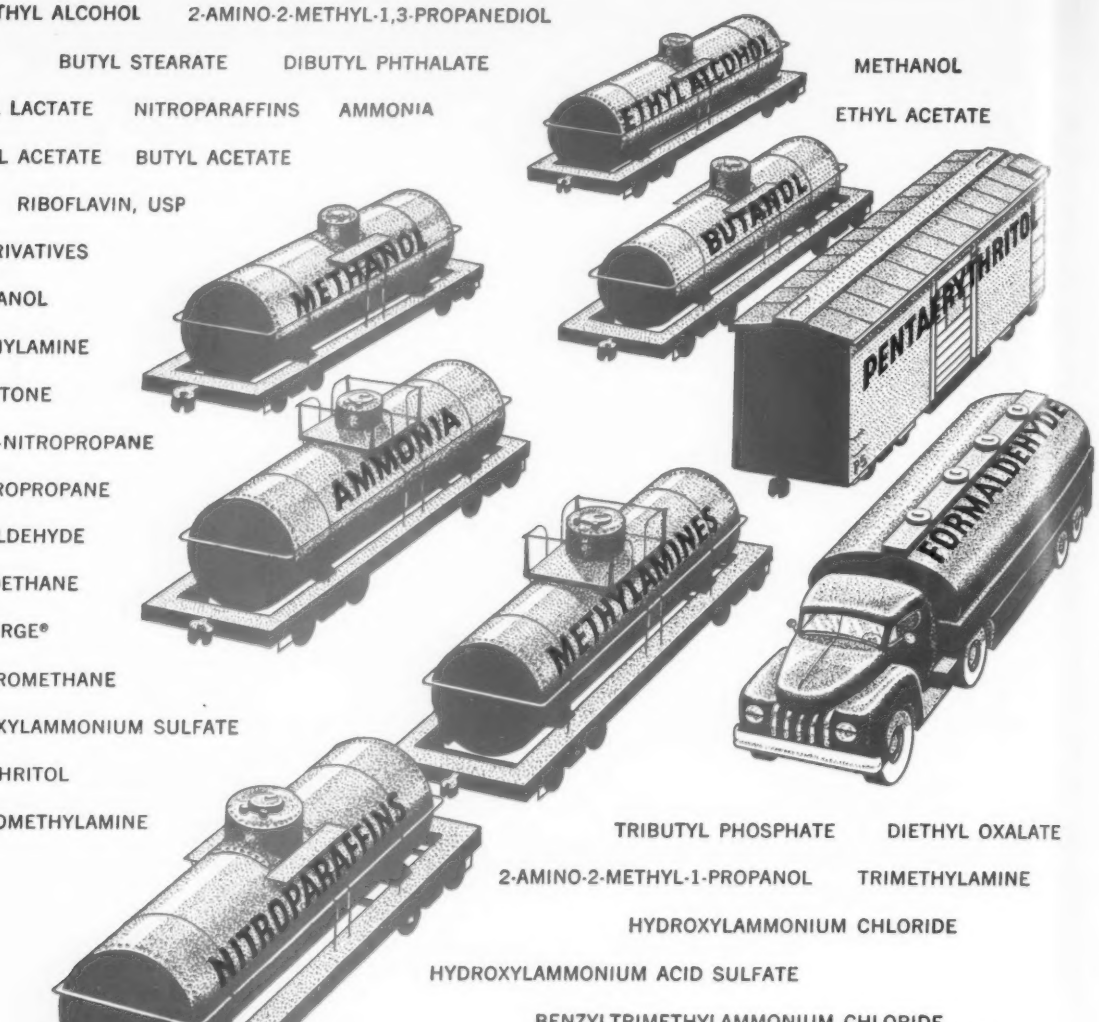
TEXAS, San Antonio
Thompson-Hayward Chemical Co.

VIRGINIA, Richmond
F. V. Gunn & Co., Inc.

WASHINGTON, Seattle
D. B. Smith

WISCONSIN, Milwaukee
R. L. Ferguson

ETHYL ALCOHOL
2-AMINO-2-METHYL-1,3-PROPANEDIOL
BUTYL STEARATE
DIBUTYL PHTHALATE
METHANOL
BUTYL LACTATE
NITROPARAFFINS
AMMONIA
ETHYL ACETATE
AMYL ACETATE
BUTYL ACETATE
RIBOFLAVIN, USP
NP DERIVATIVES
BUTANOL
DIMETHYLAMINE
ACETONE
1-NITROPROPANE
2-NITROPROPANE
FORMALDEHYDE
NITROETHANE
ALKATERGE®
NITROMETHANE
HYDROXYLAMMONIUM SULFATE
PENTAERYTHRITOL
MONOMETHYLAMINE
TRIBUTYL PHOSPHATE
DIETHYL OXALATE
2-AMINO-2-METHYL-1-PROPANOL
TRIMETHYLAMINE
HYDROXYLAMMONIUM CHLORIDE
HYDROXYLAMMONIUM ACID SULFATE
BENZYLTRIMETHYLAMMONIUM CHLORIDE



CSC supplies American industry with 35 basic chemicals

CSC PETROCHEMISTRY—that industrial magic that creates essential chemical tools from natural gas, petroleum products, and air has a worthy partner in CSC's BIOCHEMICAL operations. Together they form the strong foundation for CSC's diversified output of several hundred important chemicals which feed the growing giant—American industry.

With its new, modern plants, warehouses, sales offices, and shipping points pinpointing the land from coast to coast, and north to south, CSC is your headquarters for basic chemicals vital to industry's processes and progress. For the right product, at the right price, and at the right time, specify CSC! CSC's market development technical service, backed by years of pioneering experience, is a highly valued extra! Write today for complete Products Catalog. Industrial Chemicals Sales Department, Commercial Solvents Corporation, 260 Madison Avenue, New York 16, New York.

COMMERCIAL SOLVENTS CORPORATION

CSC INDUSTRIAL CHEMICALS

INTERIOR WALL PAINTS BASED ON VINYL ACETATE RESIN LATEX

By W. M. SULLIVAN*

THE remarkable growth of the latex wall paint field during the past six years has been too well documented from every viewpoint in trade journals and popular magazines to require repetition. Nationwide acceptance of these paints by the consumer as indicated by the present high rate of production confirms the expectation that their unique qualities would fill a long-standing need. These properties, together with a few that are not particularly desirable, are well known to the paint maker.

As noteworthy as the development of the latex paint market itself is the high level of interest in vinyl acetate resin latex currently being displayed by paint formulators. It is not only interesting but promising for the future of the coatings industry to note that the intensive search for better materials continues undiminished despite the existing large market for the current products. Obviously many desirable properties must be present in today's latex paints, but the possibility that improved coatings of greater versatility can be made with vinyl acetate resin latex undoubtedly accounts for the attention which has centered upon this vehicle.

Although the use of vinyl acetate resin latex in paints has not been investigated widely in this country until recently, large amounts have been produced for use in various adhesives applications for a number of years. A considerable background of experience in the production of latex of uniform quality has thus been acquired. The coatings type of vinyl acetate resin latex is ordinarily supplied in an intermediate particle size range and usually contains non-ionic protective colloids of different types than those employed in adhesive grade latices. The common physical properties of commercial vinyl acetate resin latices for coatings uses are covered by the following ranges:

Per cent non-volatile	55—60
pH	2.6—6.0
Consistency, cps (Brookfield*)	800—2500
Particle charge	Negative
Particle size, microns	0.5—3.0

*Model LVF—Spindle 4 at 60 rpm.

In addition, a satisfactory paint latex should possess sufficient mechanical stability, electrolyte tolerance and inherent freeze resistance to relieve the paint manufacturer of elaborate techniques and complicated precautions.

Film Properties

Films of vinyl acetate resin latex are formed by evaporation of water. No "curing" or oxidation is involved. The dried film is colorless, tough, and resistant to oxidation, ultra-violet light, acids, alkalies, and greases. Although the vinyl acetate resin molecule is inherently somewhat hydrophilic, a few of the coatings grade latices are further characterized by very good water resistance immediately after drying. A tabulation of the outstanding properties of the latex and its films will be helpful in summarizing the foregoing text. (Table I).

It has been found possible to retain and utilize these properties to advantage in wall sealers and paints which exhibit excellent performance characteristics.

	Property	Advantages
Latex	1. High solids content	Greater latitude in formulating.
	2. Intermediate Particle Size	Excellent mechanical stability. Excellent freeze resistance. Low protective colloid requirement.
	3. Non-ionic Stabilizer	Excellent electrolyte tolerance. Excellent viscosity stability. Reduced sensitivity to pH changes.
Film	4. Fast Film Formation	Develops adequate water resistance to permit recoating within one hour. Excellent washability after overnight dry.
	5. Oxidation Resistance	Retains excellent initial color and is non-embrittling.
	6. Alkali Resistance	Suitable for use as sealer for "hot" plaster.

Table I. Tabulation of outstanding properties of latex and its films.

*Development Laboratories, Bakelite Co., Div. of Union Carbide and Carbon Corp., New York 17, N. Y.

This is an original paper prepared for publication in "Paint and Varnish Production."

The terms "Bakelite," "Carbitol," "Flexol", and "Syntrol," are registered trade-marks of Union Carbide and Carbon Corp.

The disadvantages of vinyl acetate resin latex are:

1. Low pH—The presence of residual amounts of acetic acid is responsible for the low pH of the latex. While this can be overcome by adding suitable buffers, it is not advisable to raise the pH appreciably above 7. The chief effects of low pH are the greater corrosion susceptibility of containers and the greater care needed in formulation to obtain the maximum value from the pigments used. Both of these problems have been solved satisfactorily.

2. High Specific Gravity—Vinyl acetate resin weighs 9.8 pounds per gallon of solids compared to 8.6 pounds for a typical styrene-butadiene copolymer. Since paints are formulated and sold by volume, the actual cost of an equivalent volume of the vinyl acetate resin is somewhat higher than would appear from a comparison of the material costs of the two types.

Plasticization

The need for the addition of a plasticizer has been cited frequently as a disadvantage of the straight vinyl acetate polymer because of the tendency of the plasticizer to volatilize and migrate into absorbent substrata or topcoats. Studies by *Bakelite Company's Development Laboratories* indicate that by far the most important function of the plasticizer is to aid in film formation by means of its solvating effect upon the resin particles. The importance of this action upon the overall performance of the paint can hardly be over-emphasized. Whether the plasticizer is retained or lost by interior wall paints does not appear at this time to be a matter of great importance if proper film formation has been achieved first. Unplasticized films of a roughly comparable resin, such as "Bakelite" vinyl acetate resin AYAT, applied from solution exhibit tensile strengths of approximately 4,200 pounds per square inch.

In the course of this investigation the film-forming abilities of a number of well-known types of latex were compared at 40 deg. F. In general, these tests showed that the coatings were adversely affected not only by temperatures in the 40-50 deg. F. range but by low humidity and strong draughts blowing across the surface of the drying film. Unpigmented films which were protected against draughts during the 20 hour drying cycle at 40 to 43 deg. F. and 50 per cent relative humidity showed that vinyl acetate resin latex plasticized with 10 per cent of dibutyl phthalate possesses better filming properties at 40 deg. F. than even the most widely used latex types. (Table II). The only exception noted was a vinyl acetate copolymer which showed excellent filming properties.

FILMING PROPERTIES OF VARIOUS LATICES AT 40 DEG. F.

Latex Type	Condition of Dry Film
A. Styrene-butadiene	Colorless, partly frosted appearance due to fine checks all over.
B. Styrene-butadiene	Colorless, completely frosted appearance due to very fine checks all over.
C. Acrylic	Colorless, transparent, a few scattered fine checks.
D. Acrylic	Colorless, slight haze, no checks.
E. Vinyl acetate copolymer	Colorless, translucent, slight frosted appearance, few scattered checks.
F. Vinyl acetate copolymer	Colorless, transparent, no visible checks.
G. Vinyl acetate unplasticized	White, opaque, fine checks all over.
H. Vinyl acetate unplasticized	White, opaque, fine checks all over.
I. Vinyl acetate H + 10 per cent DBP	Clear, transparent, no checks visible.
J. Vinyl acetate H + 10 per cent "Carbitol" solvent	Clear, transparent, no checks visible.

Test Conditions: Temperature 40-43 deg. F. Relative humidity 50 per cent.
Films applied to glass plates with 0.003-in. clearance Bird Film Applicator.
Samples and all apparatus held at 40-43 deg. F. prior to and during application.
Films dried at 40-43 deg. F. for 20 hours, then conditioned at 77 deg. F. and 50 per cent relative humidity before rating.

Table II

The failure of latex paints to perform as expected can occasionally be traced to application under adverse conditions. In the more usual case it is virtually impossible to obtain reliable information on application conditions since the user will not readily admit his failure to observe the simple precautions which appear on most latex paint labels. Fortunately, good filming and consequently good paint performance, can be obtained with vinyl acetate resin latex paint applied over a wide range of weather conditions. As shown in Table II, a small addition of plasticizer results in the formation of an excellent film at 40 deg. F. More volatile filming aids such as "Carbitol" can be substituted for the plasticizer in these tests with equal effect. Water-miscible filming aids such as "Carbitol," ethylene and propylene glycols perform two functions. The application properties are improved by their presence as they prevent too rapid drying of the surface, and they further assist film formation by exerting a definite solvating effect upon the resin particles.

The water-immiscible filming agents commonly used are better known as plasticizers although there is some evidence which indicates that their most important function is to insure good film formation. Dibutyl phthalate and tricresyl phosphate are the two most widely used in vinyl acetate resin latex paints although a number of others, for example, "Flexol" plasticizer 4GO, work well with the resin. More volatile solvents for the resin such as pine oil, octylene glycol and phenyl methyl carbinol can be employed when necessary, as in the case where a resinous plasticizer having low solvency for the resin is to be used.

Scrub Resistance

In the formulation of interior latex paints, the influence of filming aids and temperatures upon the

performance of vinyl acetate resin paints can best be gauged by determining the scrub resistance of the coating. This test evaluates simultaneously many of the factors upon which the ultimate performance of the paint depends. Variations in drying temperatures and filming agents were studied by Bakelite Company Laboratories with respect to their effects upon scrub resistance. The same series of paints was tested simultaneously to determine the rate of plasticizer loss and the effect of such loss upon the scrub resistance of the film. The formulation of the paints used in the following tests is essentially the same as EF-1889 which appears at the end of this paper.

Table III presents data showing the effects of various filming aids upon the scrub resistance of paints applied and dried at low and normal temperatures.

Filming Aid	Amount PHR	Dried 24 hrs. at 40 deg. F., 50 per cent R. H. Aged 7 days at 77 deg. F.		Dried at 77 deg. F., 50 per cent R. H. Aged 7 days at 77 deg. F.—50 per cent R. H.	
		Cycles	Per Cent Film Removed	Cycles	Per Cent Film Removed
1. None	—	30	100	250	95
2. Butyl "Carbitol" Acetate	10	2000	0	2000	0
3. "Carbitol" solvent	10	1000	45	2000	20
4. Dibutyl phthalate	10	1400	80	2000	5
5. Dibutyl phthalate + Butyl "Carbitol" Acetate	10 + 10	2000	0	2000	0
6. Dibutyl phthalate + "Carbitol" solvent	10 + 10	2000	0	2000	0

Note: Scrub resistance values determined on Gardner "Straight Line Washability Tester" using 0.5 per cent IVORY soap solution: One cycle = 2 strokes. Paints applied to primed surface.

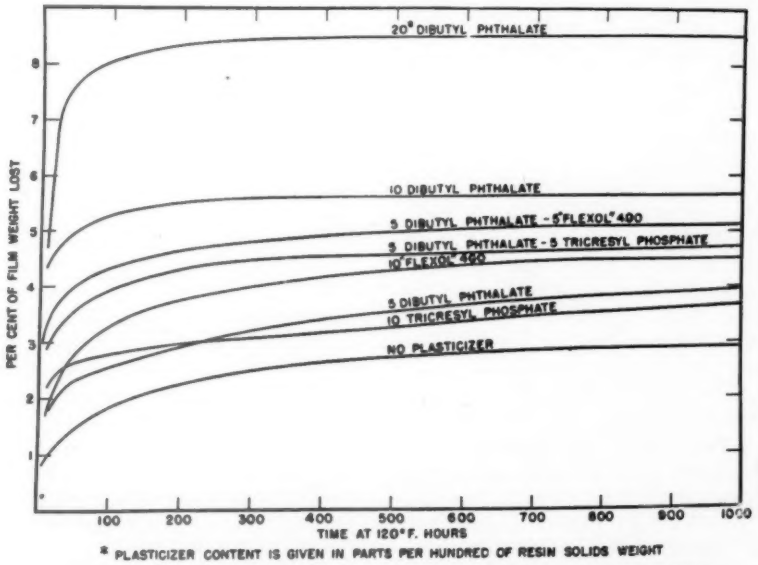
The estimated percentage of film removed is based on the center 4-inch section of the test panels.

Table III. Data showing the effect of various filming aids on scrub resistance of PVA paints.

The rate of plasticizer loss from films of these paints, 1 mil dry thickness (0.001 in.) when applied to metal panels, was determined at 120 deg. F. Figure 1 shows the rather surprising rate at which dibutyl phthalate was lost, over 80 per cent during the first 100 hours, and indicates that tricresyl phosphate has the best chance of being retained for an appreciable period. Further investigation along these lines indicates that an increase of 50 per cent in the film thickness will reduce the plasticizer loss to about one-half the value shown. Nevertheless, it would appear that some of the reported exposure tests of long duration show that when good filming has been promoted, and particularly where dibutyl phthalate is used as the plasticizer, the excellent performance of a vinyl acetate resin latex paint system is due to the vinyl acetate resin itself. This is presumed since a combination of volatility and leaching should eliminate substantially all of this plasticizer in a fraction of the total exposure time.

In order to evaluate the influence of plasticizer loss upon films of the same paints, the scrub tests shown in Table IV were run.

The effect of slightly elevated temperatures in improving the continuity of the film, even in the absence of filming agents, is well illustrated by Sample No. 1 in Table IV. The lack of plasticizer in the coating results in no practical loss of scrub resistance if filming is obtained by other means such as elevated temperatures or the addition of volatile solvents as shown by Sample 2 and Sample 3 in Table III. Samples 4 and 5 in Table IV indicate a possible loss of scrub resistance due to excessive softening of the film. In such cases, a lower plasticizer content might well be employed in conjunction with a volatile filming aid in order to obtain the maximum result.



* PLASTICIZER CONTENT IS GIVEN IN PARTS PER HUNDRED OF RESIN SOLIDS WEIGHT

FIGURE 1. RATE OF PLASTICIZER LOSS FROM VINYL ACETATE RESIN LATEX FILMS AT 120° F.

Approximation of plasticizer loss at any time interval on the curve can be obtained by scaling vertical distance between base line established by "No Plasticizer" film and desired plasticizer curve. Scale value divided by values given below for "Calculated Plasticizer Content of Film" will give the percent of total plasticizer lost.

Calculated Plasticizer Content of Film

Dibutyl Phthalate	5 PHR	2.07 percent of dry film wt.
Dibutyl Phthalate	10 PHR	4.02
Dibutyl Phthalate	20 PHR	7.26
"Flexol" 4GO	10 PHR	4.02
Tricresyl Phospate	10 PHR	4.02

Sample No.	Plasticizer Used	Plasticizer Content (1)	Per Cent Plasticizer Lost in 100 hrs. at 120 deg. F.	Scrub Resistance (2) Films Aged 7 days at 77 deg. F. Cycles	Per Cent Film Removed	Films Aged 100 hrs. at 120 deg. F. Cycles	Per Cent Film Removed
1	None	——	——	500	50	6000	10
2	DBP	5	80.5	5000	50	6000	10
3	DBP	10	100.1	3000	50	6000	5
4	DBP	20	85.4	3000	50	7000	50
5	"Flexol" 4GO	10	20.8	2200	60	8000	50
6	TCP	10	27.9(3)	5400	60	6000	50

Notes: (1) Plasticizer content expressed as parts per hundred of resin solids.

(2) Test procedure same as given for Table II. Specimens for both tests cut from same coated panel. Panels coated and dried at 77 deg. F. and 50 per cent R. H. Panels in heat aging tests conditioned for 24 hours at 77 deg. F. and 50 per cent R. H. prior to scrub testing.

(3) The initial weight loss of tricresyl phosphate was rather high. After 1000 hours at 120 deg. F., the loss after correction for weight losses measured on the unplasticized samples was close to 19 per cent of the original weight of tricresyl phosphate. At the 1000-hour point, 26 per cent of the "Flexol" plasticizer 4GO has been lost.

Table IV. Scrub tests to evaluate the influence of plasticizer loss upon the same paint films presented in Table III.

Pigmentation

The selection of the most suitable pigments and the method used for their dispersion in the latex are secondary only to film formation in determining the quality of the paint. The terms "pigment slurry" and "pigment dispersion" hardly suggest suspensions of particles which approach latex particles in size; yet if a pigment such as rutile titanium dioxide were completely dispersed, the particles in the resulting suspension would be about one-half the size of the smaller particles in a vinyl acetate resin latex. Although such a dispersion is not attainable in practice, it is evident that even less well-dispersed pigment suspensions present important stability problems. An excellent dispersion of pigment can be badly flocculated by subsequent additions of other paint ingredients; therefore, great care must be exercised during all steps of manufacture.

The choice of pigments for latex paints has been simplified greatly by the work of the pigment manufacturers in evaluating and modifying their products for this use. As the requirements necessary in a pigment for use with vinyl acetate resin latex are similar to those needed with other types of latex, the pigment manufacturers' suggestions will provide a good starting point. In the field of organic colors, the phthalocyanines, toluidines and Pigment Green B have worked well, but Hansa Yellow appears potentially troublesome. A wide variety of inorganic pigments and extenders seem to work with vinyl acetate resin latex provided they meet latex paint standards with respect to freedom from water-soluble salts and pH stability. Zinc oxide has given some trouble in these formulations and calcium sulfate types appear to require further investigation. In general, the pigment or extender should not exhibit excessive water demand and should preferably be of the low or medium oil absorption types.

Since the pH range of vinyl acetate resin latex is normally in the 3 to 6 range, the choice of pigment dispersants and wetting agents is of great importance, particularly in view of the fact that the optimum pH range for the dispersion of most pigments is more toward the alkaline side in the 7 to 8 range. Obviously an excellent pigment dispersion might be prepared with one of the alkaline anionic wetting agents and severely flocculated by subsequent blending with the latex. The non-ionic wetting agents, therefore, offer the most promise. The use of anionic dispersants, as distinguished from wetting agents, and exemplified by salts of alkyl aryl sulfonic acid condensation products, is not precluded since these materials assist in obtaining a state of maximum dispersibility which can be maintained or stabilized by the concurrent use of a non-ionic wetting agent. In many cases extremely small additions of a dispersant such as "Daxad" 23 have been found to eliminate foaming in pebble mill grinds of pigments in which a wetting agent such as "Tergitol" NPX or "Tergitol" NP-35 was used, and to promote greater hiding in white paints of low titanium dioxide content.

Modifiers

Ethylene glycol is commonly used in vinyl acetate resin latex paints as an aid to application and filming. The addition of ethylene glycol to pigment dispersions prepared with at least some non-ionic wetting agents has been found effective in reducing the flocculating effect, aptly called "pH shock," of the latex addition.

Thickening agents for these paints are ordinarily of the cellulosic type although guar gum has been found to be high in thickening efficiency. Sodium carboxy methyl cellulose is not desirable for the reasons cited against the use of anionic wetting agents. Exceptions are certain ammonium salts such as ammonium polyacrylate. As an example, a combination of vinyl acetate latex with 2 per cent of sodium carboxy methyl cellulose can be coagulated readily with alum although the latex itself is quite stable to large additions of alum.

Other modifiers used in vinyl acetate resin latex paints include filming aids such as the solvents and plasticizers previously discussed, defoaming agents, corrosion inhibitors and mildewcides. "Bakelite" Vinyl Acetate Resin Latex WC-130 exhibits excellent

resistance to foaming during the manufacture of the paint, as well as in its packaging and application. No defoamer has been deemed necessary although a number of such materials, including tributyl phosphate, "Foamex," and "Nopco" products 1497-V, JMV and JMY, can be added with no apparent ill effect in cases where hard water tends to cause foaming.

The use of such resin-lined cans as may be recommended by container producers is suggested in the absence of definite knowledge regarding the behavior of the various corrosion inhibitors mentioned in the literature when used in any specific paint formulation. Sodium nitrite, sodium benzoate, ammonium oleate and a few proprietary products are being recommended currently for the control of can corrosion and are doubtless of value in some compositions. The specific behavior of latex coatings in general indicates the desirability of thoroughly evaluating the results of adding any apparently minor component.

As in all aqueous systems, vinyl acetate resin latex paints require a mildewcide to protect the paint during possible long storage periods. Vinyl acetate latex itself is not highly susceptible to attack by microorganisms. However, other ingredients, such as thickeners, are present in the finished paint and it is desirable to incorporate a preservative. As little as 0.05 per cent "Butrol," based on the total weight of paint, has given good protection in the laboratory, but conditions encountered in plant manufacture or climates unusually suitable for mildew development indicate that a higher level, such as 0.15 per cent, might well be employed. The mildewcide is best added during the preparation of the thickening agent dispersion although it can be added to the finished paint, if desired. The small residual amount of vinyl acetate monomer in the latex is also effective in mildew control.

Formulation

Three starting paint formulations which embody the main points in the preceding discussion are shown below. These coatings represent recently developed pro-

(*Turn to page 76*)

Formula Suggestion UF-1864
Plaster and Wallboard Sealer

FORMULA:

	Pounds	Gallons	Percentage by Weight
Titanium Dioxide (1)	102.00	2.91	10.12
Mica (Water-ground)	76.50	3.24	7.60
WC-130 (58.5 per cent N. V.)	330.80	35.58	32.94
Water	294.50	35.35	29.25
Dibutyl Phthalate	18.90	2.16	1.88
Ethylene Glycol	85.50	9.20	8.48
"Cellosize" WP-300 Solution (7.5 per cent N. V.)	99.00	11.56	9.73
"Daxad" 23	0.02	—	—
THEORETICAL YIELD	1007.22	100.00	100.00

(1) Rutile; semi-chalking grade; TT-T-425, Type II.

MANUFACTURING PROCEDURE:

Preparation of Pigment Paste: Dissolve the dispersing agent in 87 per cent of the water. Add the pigments and grind for four hours or until a good dispersion is obtained.

Preparation of the Sealer: With good agitation, add to a paint mixer in the following order: pigment paste, ethylene glycol, plasticized WC-130, and WP-300 solution. Mix well.

PROPERTIES:

Viscosity	— 860 cps (Brookfield, 60 rpm, Spindle #4)
Non-volatile	— 39.8 per cent
Pigment Volume Ratio	— 22.5 per cent
Freeze Stability	— Passes 3 cycles at −6 deg. F.
Weight per Gallon	— 10.1 lb.
pH	— 4.9

Formula Suggestion EF-1888
Green Interior Wall Paint

FORMULA:

	Pounds	Gallons	Percentage by Weight
Titanium Dioxide (Rutile)	16.0	0.46	1.48
Lithopone (Low oil absorption)	149.5	4.07	13.82
China Clay	112.0	5.21	10.37
Pigment Green B (Latex Dispersible)	26.8	2.08	2.48
WC-130 (58.5 per cent N. V.)	316.0	33.94	29.23
Water	287.2	34.43	26.57
Dibutyl Phthalate	18.6	2.12	1.72
Ammonium Polyacrylate Solution (15 per cent N. V.)	33.9	3.84	3.14
Ethylene Glycol	34.6	3.74	3.20
"Carbitol" Solvent	20.4	2.38	1.89
"Cellulosize" WP-300 Solution (7.5 per cent N. V.)	63.4	7.44	5.86
"Tergitol" Dispersant NP-35	2.6	0.29	0.24
"Daxad" 23	0.0015	—	—
THEORETICAL YIELD	1081.0015	100.00	100.00

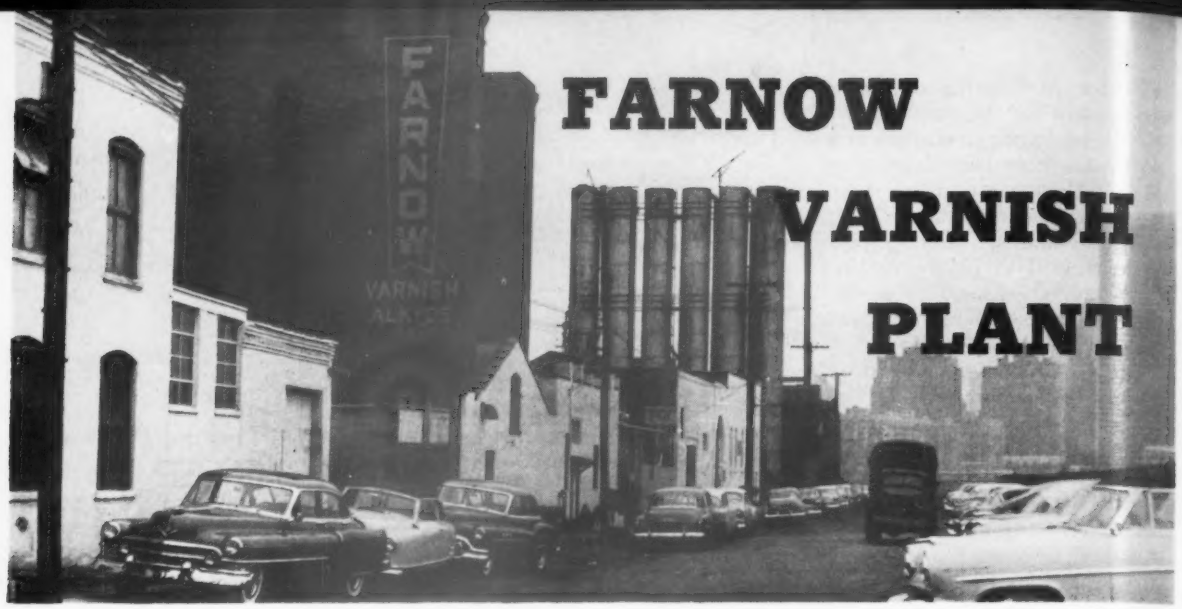
MANUFACTURING PROCEDURE:

Preparation of Pigment Paste: Charge 50 per cent of the water to a pebble mill. Dissolve the dispersing and wetting agents, add the pigments, and grind for 6 hours (1-quart pebble mill).

Preparation of the Paint: Add the various components to a paint mixer in the order given below. Agitation should be continuous during each addition and each component should be thoroughly dispersed before the next is added. Pigment paste, ethylene glycol, plasticized WC-130, ammonium polyacrylate solution, balance of water (37.7 per cent), "Carbitol" solvent, and WP-300 solution.

PROPERTIES:

Viscosity	— 1100 cps (Brookfield, 60 rpm, #4 spindle)
Non-volatile	— 48.2 per cent
Pigment Volume Ratio	— 36 per cent
Freeze Stability	— Passes 3 cycles at −6 deg. F.
Weight per Gallon	— 10.8 lb.
pH	— 6.25



IT WAS not so long ago that the manufacture of varnishes and paint grinding vehicles was a secret art handed down from father to son.

The equipment used in those days was very primitive. The varnish kettle was either a cylindrical or hemispherical vessel having a working capacity of 2-3 drums. A coke fire was used as the heating medium and usually had to be started an hour or so before the "cooking" operation. Stirring was done by means of a hand paddle. Temperatures were checked by noting the smoke or haze over the surface of the varnish, or how brown a piece of bread became when it was dipped into the hot varnish, or the type of crackle that developed when the varnish was "spit" upon. Liquid raw materials such as drying oils and solvents were added to the batch by means of buckets. Solid materials such as resins were weighed on a portable platform scale and shoveled into the mixture.

Farnow Varnish began manufacturing varnishes and vehicles in 1938. Capacity then ran about 500 gallons a day when the demand was there. Today, this firm is manufacturing up to 12,000 gallons per day of various vehicles in an area of approximately 25,000 square feet. With such a limited area of working space, planning in raw material scheduling and material handling are most important for assuring maximum production capacity.

One of the original organizers of Farnow Varnish was Ben Farber. Ben majored in chemical engineering, was connected with a consulting laboratory and prior to the formation of the Farnow Varnish Works, was technical director of the Garland Paint Co. in Cleveland.

Ben was elected treasurer of the New York Paint, Varnish and Lacquer Association last spring. In 1951 he was elected chairman of Vehicle Manufacturers Committee and under his direction, this com-

Incoming materials are received in tank wagons.

Handling and stacking of drums with fork trucks.

Header unit where liquid materials are weighed into a tank before processing.

Above shows weighing and filling of calcicoater vehicle in 50-gal. drums.

mittee became one of the most vibrant and active groups of the New York Association.

In his new venture with Farnow Varnish Works, Ben related an incident which he experienced in bodying fish oils that could have meant disaster to the newly formed organization.

It had been proven in the laboratory that 565° F. was a good temperature for bodying fish oil. Therefore, in making a batch of bodied fish oil in the plant, the kettle was brought up to 565° F. and taken off the coke fire. The workers expected the temperature to remain around 565° F., but much to their surprise, the temperature kept rising rapidly to 570°, 580°, 610°, and finally reaching 620°. In order to avoid a flash fire, the workers were frantically applying water to the inside of the kettle, and yet the temperature kept going upward. To this day, Ben doesn't known why the fish oil hadn't flash and burst into flames.

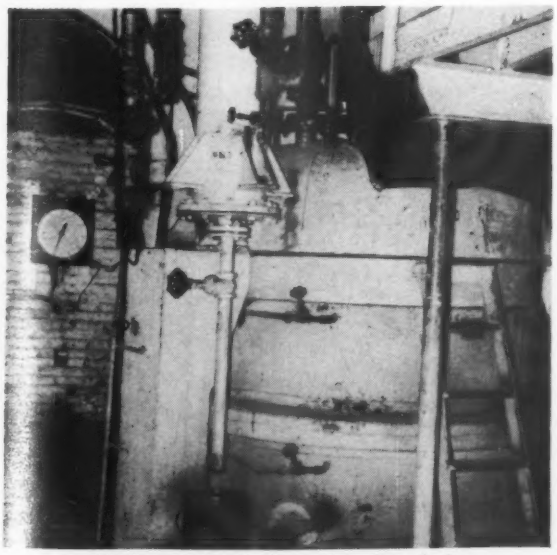
What caused the rise in temperature during the bodying process? It was discovered that the bodying or polymerization of fish oil is a highly exothermic reaction, which is not so evident in small laboratory cooks.

Thus, this incident taught Farnow a lesson—more precautions and thought should be exercised in transferring a process for the laboratory into the plant.

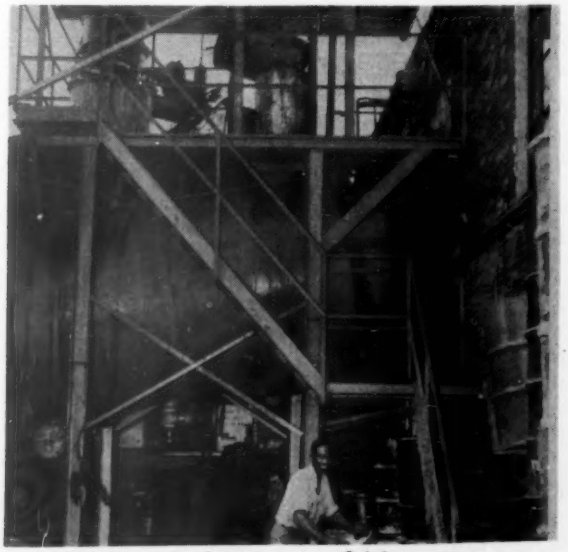
When Farnow began operations, it started out with 150 gallon open kettles equipped with hand paddles. These were gradually replaced with larger set kettles embodying the latest designs in materials and construction.

The original kettles were made of copper, then came Monel, followed by stainless steel. However, the term, stainless steel for cooking kettles varied in concept. The first kettle was made of 305 ELC (extra low carbon stainless). Latest development is a 316 stainless having a minimum of 2.5% molybdenium. This type of stainless steel was found to be very satisfactory for producing light colored products.

With competition in the resin and vehicle field becoming increasingly keener, Farnow Varnish, like other suppliers, is constantly striving to improve its processes and methods to insure the optimum in production and quality of its diversified line, which go into the manufacture of enamels, flats, outside house paints, trim and trellis finishes, industrials,



Modern cooking kettle employs direct fuel or fire with agitator rotating 125 r.p.m. and is 316 stainless steel with condenser set-up.



Side view of calcicoater unit. Solid raw materials are lifted by elevator; liquids are pumped. One batch produces 68 drums (3400 gallons).

Laboratory alkyd resin unit where polymerization and esterification studies are worked out.

Preparing an experimental laboratory batch for the synthesizing of an alkyd resin.

baking enamels, etc. Tailor made items are also manufactured to meet the customers' special requirements.

Basic raw materials such as phthalic anhydride, glycerine, pentaerythritol, oils, fatty acids and mineral spirits are received in carload or tank wagon lots.

Fork lift trucks and pumps are the basic means of handling material. Liquid materials are pumped into storage tanks having an overall total capacity of 150,000 gallons. Drums, when received or filled, are stacked three high on pallets, four to a pallet. Farnow has found that this method makes shipping and inventory maintenance much easier.

Fire Safety

For insuring the maximum in fire safety, Farnow believes in a defense in depth.

The first defense is good housekeeping. Preventing a fire is the most important part of the program. This demands thought, good engineering, and constant inspection.

If a fire starts, each man in the plant or laboratory must know what to do. The most important aspect in fighting a fire is to start extinguishing it the very second it gets started. Speed is essential. Thus, 15 and 25 pound CO_2 extinguishers and 2½ gallon "Foamites" are placed near danger spots where they can be easily "grabbed" to "knock out" an incipient fire. Farnow is presently changing over to dry powder extinguishers in preference to portable CO_2 extinguishers because the dry powder extinguisher has found to be more effective in "knocking out" a fire. In the case of CO_2, a fire may reignite, as often happens, when the CO_2 is dissipated. However, CO_2 extinguisher have 2 advantages over dry powder: (1) leave no residue to contaminate the batch, (2) eliminates the need for cleaning after a fire has been extinguished.

Once a fire gets started and roaring, foam, and plenty of it, is the only means of bringing it under control.

The forty gallon engines are very effective in fighting fires. When used, they produce many times the forty gallons in foam. Once the surface is covered with foam, the chance for reignition is small. As the last line of defense, Farnow has a play pipe connected to a two inch water line. Close by is stacked "Foamite" solution in five gallon cans.

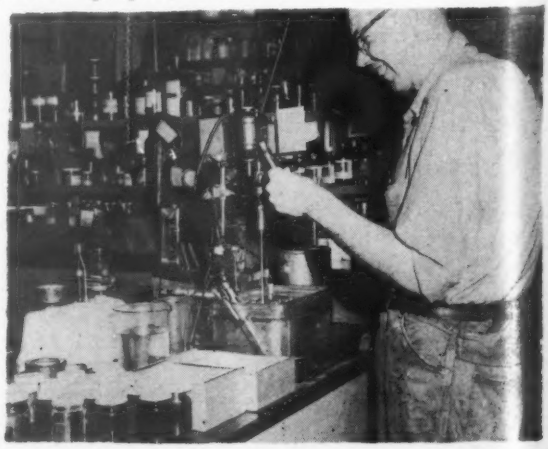
For a bad fire the water is turned on. The play pipe is inserted into one of the five gallon cans of "Foamite" solution. The solution is metered slowly into the rushing water and foam emanates from the nozzle. Many thousands of gallons of foam can be made in this manner, which is capable of extinguishing the worst type of fire.

Laboratory

Raw materials coming into the plant are checked and constants are taken and recorded. Farnow finds that they are able to maintain better control in production by having all constants of the raw materials readily available.

During the course of processing each batch, samples are taken to the laboratory where acid numbers, color and viscosity are checked and graphed. After the batch is completed, other properties may also be checked, such as dry, water resistance, color on drying or any other characteristic which are considered important from the customer's standpoint.

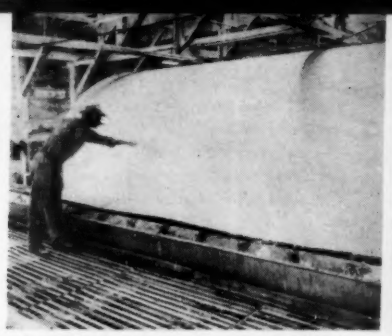
This laboratory has developed a "short-cut" method for running non-volatiles which consists of placing a given amount of liquid material on an aluminum panel and employing an infra red lamp for heating purpose and a CO_2 purge. This method takes approximately 20 minutes and has been reported to be as accurate as the ASTM method for practical purposes.



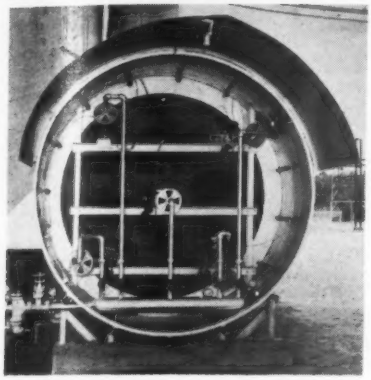
Constant temperature water batch is employed for viscosity control tests with Gardner-Holdt tubes.

Kaolin in milling vat forms a slurry when water is added. This starts process of water washing and fractionating.

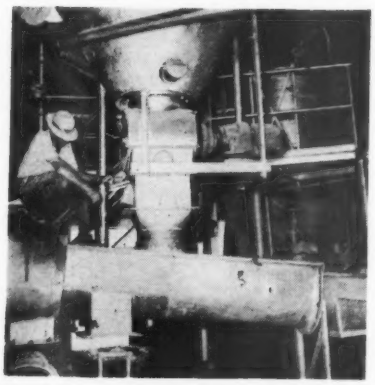
Slurry is partially de-watered and solids content brought to point where slurry can be picked up on filter drums.



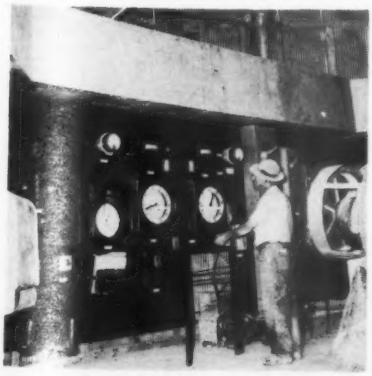
Spray-Satin cake builds up to 58-60% solids on rotating filter drum. Doctor roll deposits the cake in a blunger.



Furnace for the Spray Drying Plant. Five large burners super heat the air which instantly dries kaolin particles.



Funnel shaped bottom of Spray Drying chamber where absolutely dry globules fall and are then fed into Fuller pumps.



Automatic controls maintain even heat in the Spray Dryer within very close tolerances enabling high uniformity.

KAOLIN PROCESSING

Features Spray-Drying Operation

The new spray drying operation, developed by the Mineral & Chemicals Corporation of America, producers of Edgar products, originates in the Klondyke Mine, Wilkinson County, Georgia.

Stripping operations at the mine are removing 95 feet of the overburden exposing a kaolin bed approximately 20-30 feet thick. Over 1,000,000 tons are moved every year at the mine.

The Process

Twin-engined Euclid scrapers (30 ton capacity) perform the multiple operations of stripping overburden, mining clay and transporting the mined material to the milling shed. The kaolin is then picked up by small payloaders and dumped into a mill where water is added and a slurry is formed. The slurry receives a primary degritting on a scalping screen and then flows into a large thickener tank. It is then pumped five miles via a 12" pipe line to another plant where it goes through another de-gritting process after a dispersant is added.

The raw material in slurry form is then bleached, and goes on to a further thickener. It is then further cleaned and purified by means of a vibrating screen (Sweco Screen).

Following this are continuous dewatering centrifuges building up solids content to a point where the slurry can be picked up on large rotating vacuum filters. A doctor roll removes the cake from the filter drum and a doctor blade shaves the cake and deposits it in a blunger where a dispersant is added.

The cake is formed into a slurry with a solids content of 58-60% which is then pumped to the spray drying plant. The slurry is further purified and filterized.

The slurry enters a spray dryer through a spraying nozzle and hits a special impeller spinning at 10,000 RPM. The particles of kaolin are dried instantaneously. Then from a Fuller Airveyor System it can be pumped directly into hopper and box cars. For bag customers, the product is drawn from the silos by gravity feed through an automatic bag packer.

Although spray drying has been known for a number of years in the industry, this process of Minerals & Chemicals is new and different. Pilot plant tests and some production runs have proved, according to the company, that a spray dried product was superior to a product dried any other way.

Production costs was a problem. On a fine particle size product the first problem was to build up the solids content of the slurry rapidly and automatically. Continuous centrifuges and the vacuum filter accomplished this. Then the problem was to make this high solids cake flow freely enough to be successfully spray dried. This was solved through the addition of a proper dispersant. In this way the dryer can work on a slurry which is up to 60% solids, the dryer needing only to expend heat energy to dry out 40% water.

Until the development, covered by a

(Turn to page 77)

66th NPVLA CONVENTION

"PROGRESS Makes Prosperity" was the theme of the 66th Annual Convention of the National Paint, Varnish and Lacquer Association, held in Chicago, Nov. 15-17. Some 1500 members and guests attended this meeting to hear first hand information on the nation's economy and mobilization program. In addition, the various lively forum discussions and panels dealing with advertising and sales promotion, roof coatings and cement, putty, glazing and caulking compounds, industrial finishes, and trade sales attracted the attendance of many conventioneers.

The following are excerpts of important talks delivered at this convention plus highlights of the forum and panel discussions.

Report of Pres. Battley

The paint, varnish and lacquer industry is prosperous because we refuse to stand still. We are prosperous because we will not believe that the best products we make today are the best products that it is possible to make. We are dedicated to a never-ending search to improve our product and to increase customer satisfaction.

I received our industry's September sales figures from the Bureau of the Census just as I was leaving Washington. It is with pride that I announce total sales for the nine months of 1954 were $1,056,621,000. Last year's total sales for the same period were $1,095,205,000. We are 3.5 percent less than last year. However, I confidently predict industry dollar sales in 1954 will break all previous records.

The technical activities and laboratory operations of the Association were made separate responsibilities this year and we now have an organization which

Pres. J. F. Battley—*"Progress is our watchword. We refuse to be static."*

can efficiently work in all research and technical fields of interest to our government and our industry.

The laboratory work on Moisture Menace will be continued to determine the performance cycle of so-called "non-blistering" paints, the degree or extent of vapor transmission through interior and exterior paints, and its relationship to adhesion on various types of lumber and adhesion problems of wall construction materials, such as plaster, wallboard, cement block, or wood, are under study.

"U. S. Government Paint Specifications", Circular 751, is in a new format and has just been issued, revised and up to date.

Progress in the field of technical education has been on a steady upgrade and we have distributed more than 10,000 copies of "Your Brightest Tomorrow" brochure to students and vocation guidance teachers throughout the country. The work of the Education Committees of local associations each school year, which makes this possible merits our thanks.

Further refinements will make the "Stick and Wick" fire retardant tests for paints more compact and enable us to make comparative laboratory tests simultaneously.

The General Service Administration used results of our scrubability tests for latex paint to revise its standards. While there is still more work on color standards to replace Federal specifications for ready-mixed paints, the range for many colors has been adopted by this administration.

We finished the Army Ordnance Department's specifications for shell and gun paints. Also we are now bringing up-to-date their older specifications for ground equipment.

I can report marked progress in our efforts to have the Navy give up their paint business. The Business and Defense Services Administration of the Department of Commerce completed their studies of government competition with several industries. Paint manufacturing was considered an unnecessary government operation. I am advised the Bureau of the Budget will issue a policy directive stopping all unwarranted government manufacturing activities. As you know, the President stated specifically at Denver, October 8th . . . "Our government has been returning to private citizens activities traditionally belonging to private citizens. It is stopping the roasting of coffee, the baking of bread, the making of paint and clothes."

There is a constant increase in the valuable information compiled in our Statistical Division. Color surveys for 1950, 1951, 1952 and 1953 are already in your hands. We have not been as

P. O. Fernall—*"Latex paints make up 26 percent of the interior market."*

K. Y. Benson—*"Dealer education and training is our job—it's mighty important."*

J. H. Kolseth—*"Paint gallonage has not kept pace with population, purchasing power."*

cooperative in furnishing monthly gallonage production to the Bureau of the Census as we have in reporting sales figures. I urge you to submit a complete report to them so that production and sales figures can be more useful to you and the industry.

Our study of Consumer Painting Habits is the largest and most comprehensive survey of the type ever made. It is of value to every one of us.

It is ironic that in this land of freedom that our attitudes and actions are so easily misunderstood at times by one or two of our allies. But this is the situation that exists and it must be faced as a factor which affects our foreign policy of our country.

Assuming the continuation of the present international situation, I look for some local incidents, but at least no World War III for another five years . . . if then but no further expansion in our military activities for I feel the actions of Moscow and Peking are intended only to determine the extent to which we will go to defend free men. We and our allies have made so much progress since Korea in the potential industrial and military capacity for joint action that their survival, not ours, is now the deciding factor.

George A. Landry

George A. Landry, assistant director for production, Office of Defense Mobilization, "pinch hit" for Arthur S. Flemming (scheduled speaker), who was unable to address the convention because of a White House appointment.

New weapons have made it possible to develop strategic plans that call for fewer men on active military duty. Consequently, we are in the process of reducing the size of our armed forces.

These developments could take us down the road to complacency. They could lead to our slipping into a period of demobilization.

The development and maintenance of that "massive capability to strike back" is the goal of our mobilization program. It must be achieved. We must deal with Soviet Russia from a position of strength and not of weakness.

In the final analysis, however, these resources carry us only a short distance toward our goal. Back of them there must be highly trained men who on a moment's notice are ready for service in the Armed Forces: manpower and facilities that can shift overnight from peacetime to wartime production: adequate stockpiles of strategic materials: and a nation that is ready to deal immediately with the problems that would arise in the wake of an attack on continental United States.

Then, and only then, will we have the "massive capability" that our economy can support and that can either deter an aggressor or, if attacked, will enable us to successfully defend our freedom.

Leo Cherne

We are entering a year already described by some economists—and correctly—as a year of stability. Stability may have a nice, safe, warm sound to you. Stability is the very antithesis of the concept that "We refuse to be static," and of the challenge that "Progress Makes Prosperity."

Stability offers at best the certainty that there will be no economic challenges of any magnitude which will threaten acute difficulty to any in this room. That doesn't mean that there is a guarantee through 1955 that all of the important business organizations in this room will prosper. On the contrary, a year of stability is a year of even more invigorated competition. A year of stability is a year in which the selling apparatus of American industry moves into high gear. A year of stability is one which the annual increase through the labor market of America, now close to a million, and the increase of productivity throughout all enterprise of approximately 3 per cent, are dumped into an economy which, for the moment, refuses to move aggressively ahead.

The reason the elections have contributed still further to this opportunity is fairly simple. It may not yet be visible to you, but the last election ended—at least for an interval of time—the last real prospect of laissez-faire government. These last elections will result in the remaining two years of the Eisenhower Administration—or the first term of the Eisenhower Administration—being directed more actively than at any time in the first two years toward economic stimulation.

In 1955 the Administration will compose a number of legislative measures which, with the Congress that we will have to work with in '55, will have little difficulty in passing, will represent still further economic stimulation, and a still further contribution to net personal income capable of being motivated into business goods and services.

Association panel exhibit showing paint technology training courses available at various universities.

Co-existence is a possibility only so long as we remain strong, and even then, it is a dangerous, tenuous, day-to-day, month-to-month, wary examination of where it is you stand in relation to that fast bloc, known as the Soviet States and its satellites.

Harold C. McClellan

Today, all of us in industry have one objective in common, and that objective is the improvement of human relations in our plants, through better understanding. This, to me, is one of the most encouraging signs of our times.

Management's job obviously is extremely important, but every manager should, on occasion, sit back and have a good, hard look at himself from the other side of the table. As individual employers from Coos Bay to Chicago to Concord, in every city or town where goods are manufactured, we should examine our relations with our own industrial family to see whether or not that family fully understands our enterprise system, if he does not first know something of the economy of the company for which he works.

I think we should be proud of the average American workman. He is an intelligent, honest, hard-working, home-living citizen. He loves his country, is willing to fight for it, and is concerned about its future. But, unfortunately, just like you and me, his judgment is no better than his information.

He needs a better, broader understanding of American enterprise, and all of America needs to know that our business system is not just a system for the benefit of stockholders and employers but that it includes all of us. Each has his opportunities in it and each gets benefits from it.

S. I. Hayakawa

When you have shouted and yelled and pounded the table in order to get a point across, and the other fellow still refuses to understand or to listen, what do you do next? Perhaps the only solution to this condition of "communicative deadlock" is to listen to the other fellow. If the messages from you to him are not getting through, the way to open the roadblock is to permit and invite the passage of messages from him to you, by means of "active (nonevaluative) listening."

But listening is far from being an easy task. Most men are brought up to be "go-getters," which means that they are busy with their own purposes, and have relatively little training in trying to understand the purposes of others.

Trade Sales Manufacturers Forum

The Trade Sales Manufacturers Forum under the chairmanship of A. A. Shuger attracted a full capacity aud-

(Turn to page 48)

32nd FEDERATION MEETING

A RECORD attendance, with official registration figures running upwards of 2500, was present at the 32nd Annual Meeting of the Federation of Paint and Varnish Production Clubs and the Paint Industries' Show held in Chicago, November 17-November 20th.

Pres. Overmyer's Report

Dr. C. J. Overmyer, retiring president of the Federation, said that one of the most vital parts of the work of the president of the Federation is the stimulation received from the constituent clubs and their cooperative spirit, and also the service which we have been able to render them.

He then discussed the responsibility of the various constituent clubs and then proceeded to report on the financial status of the Federation.

Dr. Overmyer also told members of the Federation the plans for having separate annual meetings from the National Association and brought out the point that it would be possible next year to extend the convention to a longer period of time.

Dr. Overmyer emphasized the value of competition in all phases of business and urged that competition be kept on a high level.

Pres. Battley

The National Association's president, Joseph F. Battley, spoke briefly to the Federation members.

He paid special tribute to the scientific and technical men of the paint industry, since they were the moving force in keeping the paint industry prosperous. His remarks were emphasized by the following statement:

"Are you aware that today we are no step-child of industry, we are the second largest user of chemicals."

Pres. Battley further remarked that prices of paint products have not kept pace with the value that is offered in a can of paint and urged upon the group that technical progress is their responsibility and it would be up to them to realize the full sales value of paint products.

Dr. J. T. Rettaliata

Dr. John T. Rettaliata, president of Illinois Institute of Technology, pointed out that science and industry are complementary to each other. He added that those who oppose higher education should be made faithful friends, merely by proving to them that the combination of science and education will make the world a better place to live in.

Pres. C. J. Overmyer—"I urge you to keep competition on a high level."

Dr. Rettaliata also pointed out that private educational institutions no longer have private contributors and must depend on corporate funds for their maintenance.

The insurance of freedom, he continued, is dependent on having highly trained personnel, made possible through scientific training.

Mattiello Lecture

Dr. J. S. Long, chemical director of Devoe and Raynolds Co., told the convention that chemists should make greater use of theoretical factors in formulating modern paint products.

Dr. Long's talk, the Sixth Joseph J. Mattiello Memorial Lecture, was entitled, "Creative Imagination as it Applies to the Decorative and Protective Coatings Industry."

Dr. J. S. Long—"It will be one purpose of my paper to try to awaken your imaginations, to think along theoretical lines."

The first part of his lecture was devoted to the idea that paint chemists should give more consideration to the theoretical aspects of film structure in formulating interior and exterior paints, and to design them accordingly. For example, the first decision in designing an interior flat wall coating is whether or not a continuous or non-continuous film is wanted. If a continuous film is wanted, the formulation would take the form of an oleoresinous or alkyd vehicle, or one in which the vehicle is a solution rather than an emulsion or latex. If a non-continuous film is wanted, then a latex film forming vehicle would be selected, because these films are formed by coalescence of suspended particles. Continuous films are likely to withstand washing and abrasion without film rupture better than a loosely knit coalesced film.

Dr. Long said that at a Building Research Advisory Board meeting in Washington in 1952, it was brought out that paint peeling is much more common today than formerly, with some corresponding tendency on the part of the public to condemn ready-mixed paints because the older paints mixed by the painter did not peel. Accordingly, Dr. Long urged, it is up to the paint industry to make the public aware of the fact that the more frequent cases of peeling are not due to the paint but to the design changes in the make-up of modern homes. Structurally, the real answer to paint peeling is to put a good vapor seal on the interior surface of exterior walls to prevent the passage of moisture vapor through the walls into the stud space where it can condense on the siding boards in cold weather, causing the wood to swell, nails to rust, and the exterior paint to open up, blister and peel. Thus, said Dr. Long, a new principle is indicated for modern home conditions: Use paint on the inside surface of exterior walls, to protect the paint on the outside of the building, as well as the physical structure of the house, itself. This is because the water that does the damage comes from the inside.

According to Dr. Long, interior paint films should be designed scientifically along theoretical lines for the purpose of meeting such objectives as overcoming ghosting, poor washability, excessive film porosity, and poor

color uniformity. Such considerations lead to the need for further study of "free oil" in the vehicle. "Free oil" may be considered as oil in the vehicle which is not bound, fixed, orientated, absorbed, locked in pigment particle voids etc. There may be considerable oil in the formula, yet it may be starved for any "free oil" necessary to impart to the film such factors as flexibility, gloss, and enamel hold-out properties.

Accordingly, in paint systems with different types of pigment particle shapes and sizes, there are changes in the critical pigment volume concentration. Any "free oil" in the vehicle beyond that needed for CPVC, can give a sharp transition in the film properties such as penetration, enamel hold-out, and color uniformity. A good distribution of particle sizes in pigmentation of interior paints results in small pigment particles helping to fill voids and making more of the vehicle available as "free oil" to give improved paint performance.

Flooding and ghosting, said Dr. Long, are caused by the more poorly wet and smallest pigment particles being carried to the surface of the film by solvent currents as the solvent evaporates.

Another phase of Dr. Long's talk dealt with the organic polymeric structural arrangement of protective coating films as the keystone of built-in strength and toughness as well as chemical resistance. For good stress-strain relationships the principle is to build high interfacial polarity with long chain molecules lying parallel to the surface. The latter act as organic reinforcing rods through the cross section with the anchors (polar feet) contacting the support surface.

In discussing film structure from the standpoint of adhesion, Dr. Long cited the use of Langmuir's hydrophil balance, measuring in dynes that point at which the mono-molecular film begins to crumble. This, he said, is the real measure of adhesion of the vehicle to water or a hydrophillic surface.

Dr. Long closed his lecture with remarks as to what things could be done by research in our present time, if we work hard enough. Among such possibilities, if theory is properly studied and applied, he predicted coatings with 50 to 100 years durability, permanently non-corrosive protection for metals, low cost finishes through the medium of coated inert pigment particles, and complete solution of the moisture peeling problem.

Paint Industries' Show

The twenty-five hundred technologists and production engineers of the decorative and protective coatings industry, who gathered in Chicago for the annual meeting of the Federation, were also interested visitors at the Paint Industries' Show which was held in the Exhibit Hall of the Palmer House.

New developments in pigments, vehicles, solvents, plasticizers, and fungicides and the latest developments in processing equipment were on display. Leading technical and engineering personnel from suppliers to the paint industry were available to discuss these new developments and the part they play in bringing to the paint consumer decorative and protective coatings having greater durability, greater ease of application, and a wider variety of colors.

A rundown of some of the more important new materials, equipment and techniques which were introduced to the paint industry for the first time is as follows:

RAW MATERIALS

Intermediates—Resinous polyalcohol for the manufacture of chemically resistant finishes and primers; and semi-alkyd resins (which have to be processed with oil) for use in modified type systems.

Resins—Alkyd resin used as a hardner in a melamine system; low-odor alkyd vehicle; completely odorless alkyd vehicle for one coat systems which is non-penetrating; copolymer resin in low odor solvent for interior finishes; fast drying copolymer resin; vinyl chloride copolymer with good solubility; odorless epoxy resin vehicle.

Latices—Highly stable styrene butadiene, vinyl acetate emulsion, emulsion vehicle based on a combination of synthetic and oleo-resinous polymers.

Solvents—Narrow range, low end point, mineral spirits from which the aromatic hydrocarbons have been removed; aromatic solvent for use when a higher flash point, slower evaporating solvent is needed; nitrocellulose lacquer solvent having good viscosity and blush resistance properties; high boiling ketone (ethyl amyl ketone).

Driers and Additives—Improved drier that approaches lead naphthenate in quality; anti-skinning agent for odorless paints; gelling agent and suspension agent which can be also used as a flatting agent in furniture lacquer; and coumarone-indene resin for use in freeze stable, exterior white polyvinyl acetate emulsion paints.

NEW TECHNIQUES

Formulation of tougher, water-resistant paints for interior wall based on vinyl acetate resin latex; sprayable industrial finishes based on a low molecular weight styrene butadiene with good solvent properties; a "cold-mix" varnish technique based on a phenolic resin.

EQUIPMENT

High speed stone mill with improved features; electro-magnetic flow meter; low viscosity, high liquid shear dispersing mill; twin heavy duty paste mixer.

Panel on PVA Paints

A lively round table discussion attracting a capacity audience, on Polyvinyl Acetate Emulsion System was held during the last session. This discussion was arranged by H. A. McConaghie who acted as moderator. Panel members included J. W. Gallagher of National Starch Products, Inc.; M. C. Londergan of E. I. du Pont de Nemours & Co., Inc.; L. R. Sherman of Imperial Paper & Color Corp.; N. G. Tompkins of Dewey & Almy Chemical Co.; and O. L. Wheeler of Colton Chemical Co.

Mr. McConaghie introduced the panel and then made a few remarks as to the purpose of this particular panel discussion; namely, to provide answers to questions regarding formulation, pigmentation, film formation, exterior durability of polyvinyl acetate emulsion paints, since there was very little in the literature which dealt with specific problems pertaining to this type of an emulsion.

TOMPKINS

Mr. Tompkins traced the advantages that have been experienced with water-base paint, particularly the latex types.

(*Turn to page 68*)

PVA Panel Members (left to right): N. C. Tompkins of Dewey & Almy Chemical Co., O. L. Wheeler of Colton Chemical Co., J. W. Gallagher of National Starch Products, Inc., L. R. Sherman of Imperial Paper and Color Corporation, and M. C. Londergan of E. I. du Pont de Nemours.

CANDID SHOTS OF PAINT INDUSTRIES' SHOW

1—B. Farber, Farnow Varnish Corp.; F. E. Bolway, D. H. Litter & Co.; C. Withington, C. Withington Co.; E. Singer, Troy Chemical Co.; J. Treikoft, C. Withington Co. 2—D. C. Statler, National Can; B. McGill, Wm. McGill & Co.; W. R. Janney, National Can. 3—R. T. Fitzsimons, T. F. Washburn Co.; R. A. Peterson, Frederick Stresen-Reuter, Inc. 4—J. A. Gordon and C. H. Parker, Monsanto Chem. Co. Co. 5—P. Wheeler and O. E. Hempel, Minerals & Chem. Corp. 6—R. A. Nagel and D. K. Farstad, Spencer Kellogg. 7—N. J. Timmons and G. Allyn, Rohm & Hass. 8—S. Shell, Shell Chem. Corp.; E. Lynch, Paint & Varnish Production. 9—E. N. Sidoroff and N. Phillips, Sharples Chemicals, Inc. 10—J. J. Ottens, J. Hayes and I. M. Colbeth, Baker Castor Oil. 11—J. G. Billings, Weber Addressing Machine Co.; J. H. Nolan and E. E. Flowers, J. H. Day Co. 12—C. W. Zink, F. Koepke and E. S. Brisbois, Epworth Mfg. Co. 13—E. H. Green, A. G. Mix and I. C. Care, C. K. Williams. 14—Mrs. E. Maxwell and F. Borrelle, Federation. 15—R. B. Anderson, Brooklyn Paint & Varnish Co., K. Price, Nuodex Prod. Co.

CANDID SHOTS OF PAINT INDUSTRIES' SHOW

1—G. E. Marsh, Godfrey L. Cabot; C. F. Ashoroft, B. E. Dougherty Co., F. King, Godfrey L. Cabot. 2—J. Kamen, M. Spitz, H. E. Whiting, P. J. Burkhart and A. Fetten, Cargill, Inc. 3—J. M. Hafeli, H. H. Coerdt and M. Pinkerman, Reichhold. 4—Mrs. W. Barrett, Mrs. L. Frohberg, Mrs. W. Vyn; J. Platner, Goodyear Co. 5—H. Mierswa, J. M. Lehmann Co., Inc. 6—J. G. McAuley, W. K. Hilty and C. J. Druse, Ross & Rowe; W. E. Sigafoose, Thibault & Walker. 7—C. H. Chapman, Bowser. 8—R. B. Lubien, R. T. Fitzsimons, J. N. Trecher and M. L. Magee, T. F. Washburn. 9—Mr. & Mrs. O. H. Garlick and R. E. Ringen, Paul O. Abbe. 10—H. E. Davis and W. L. Harper, The Reardon Co. 11—S. Goldfarb, Scientific Oil Compounding Co.; G. Stud and J. Stern, National Starch Co. 12—R. S. Stuckless and E. B. Brown, L. H. Butcher Co.; C. M. Baldwin, Troy Eng. & Mach. Co. 13—L. Miller, Barrett Div.; E. B. Brown, L. H. Butcher Co. 14—R. Gross. Ralph Gross Adv., Inc.; H. Farcas, U. S. Stoneware; L. E. Wybil and O. Gomoll. 15—L. B. Smith, J. F. Stiff, K. S. Wade and J. T. Kealy, Binney & Smith.

CANDID SHOTS OF PAINT INDUSTRIES' SHOW

1—C. C. Candee and C. E. Kew, Kinetic Dispersions. 2—S. Klein; H. Hockmeyer, Herman Hockmeyer Co. 3—D. A. Hovey, Archer-Daniels-Midland; H. Johnson, Naftone, Inc. 4—A. Sarjanian, Sarjanian Glove Co.; E. Peter and F. Weitzner, Kent Machine Works. 5—C. St. Clair and S. G. Aramto, Witco Chem. Co. 6—A. Saunders and H. D. Craft, R-B-H Dispersions. 7—A. Saunders, R-B-H Dispersions; W. F. Whitescarver and C. Bryon, American Cyanamid Co. 8—G. Miller, H. W. Munday, J. Duff and Wayne Grupe, Cuno Engineering Corp. 9—M. Antonvich, C. A. Lechner, A. Lechner, G. Gregg, W. C. Tucker and A. A. Talcott, Advance Solvents & Chem. Corp. 10—E. Cone; S. D. Hollis, Penna. Ind. Chem.; C. Stienhoff, Fox Paint Co.; R. C. Clark, Hercules Powder Co. 11—B. Leopold, Ferbert Schorndorfer, Dr. A. Brauch, Carbon Dispersions; S. Farrell, Ferbert Schorndorfer; S. F. Dimlick, Dimlick-Radcliffe; C. Hayes, Ferbert Schorndorfer. 12—R. M. Garoutte and G. R. Nottingham, Pacific Vegetable Oil. 13—H. P. Beardsley DuPont; A. R. Stewart, Canadian Industries Ltd.; C. P. Argana and R. D. Emmick, DuPont. 14—W. W. Madden, Firestone Plastics Co.; I. H. Bingham, Synthetic Chem. Co.; H. E. Cooper, Firestone Plastics Co. 15—F. J. Leonard and J. H. Arthur, Nopco Chem. ical Company.

CANDID SHOTS OF PAINT INDUSTRIES' SHOW

—J. Schrage, Sherwood & Co.; R. E. hnson, Anderson Prichard; T. Worum, orum Chem. Co. 2—A. Olotka, Archer- aniels-Midland; T. R. Aalto, Heyden hem. Co.; C. W. Irwin and G. W. Waters, ell Oil. 3—R. M. Lauderbaugh, Neville hem. Co.; W. C. Ashley, Proxylin Prod. .; W. Craig, Neville Chem. Co. 4—C. . Sage, General Electric Co.; C. H. dams, F. C. Verduin and F. W. Porter, Sherwin Williams. 5—B. Varick, Fred A. Jensen Co.; E. Matthews, Matthews Paint Co.; R. E. Meeker, MacBeth Corp. 6—R. Kinny, J. McBride, B. Davis and D. F. Braun, Penna. Ind. Chem. 7—J. M. Sharpley, J. J. Dietzel and E. F. Weiss, Buckman Labs.; H. Strassel, Progressive Paint Co.; M. Roy, Sico Paint Co. 8—L. K. Ross, H. B. Book and C. K. Ross, Chas. Ross & Son Co. 9—H. E. Kelly and T. F. Grady, Carbide & Carbon Corp. 10—H. E. Reebel, C. R. Lee and R. R. Moore, Eastman Chem. 11—W. Patzig, A. Blanck and R. Davis, Celanese Corp. 12—L. P. Smoot, Morehouse Industries, Inc. 13—E. Singer, Troy Chem. Co.; N. D. Cota, Patek Bros. Inc.; D. W. Glaser, General Mills, Inc. 14—B. J. Alport, Atlas Elect. Devices; H. Wampner, Reichhold Chem. 15—C. J. O'Neil and R. E. Parry, Johns Manville.

NEWS

Glidden Company Dedicates New Plant in Quebec

Dwight P. Joyce, president of the Glidden Company, dedicated a new paint and varnish plant, the first of the company's three planned additions in the Province of Quebec. The plant was dedicated at Ville LaSalle, a Montreal suburb.

Costing approximately $600,000, the plant has an initial annual capacity of 700,000 gallons.

At the same time, Mr. Joyce forecast "more than doubled" purchases of titanium slag from the Province of Quebec within two years. Present purchases exceed $1,000,000 per year, he said.

When Glidden's new titanium slag processing plant at Marley Neck, near Baltimore, is completed early in 1956 the company will purchase two or three million dollars worth of slag from the province of Quebec, according to Mr. Joyce.

"It is more efficient and more economical to purchase titanium slag from Quebec," Mr. Joyce said.

The company also is erecting, at Toronto, a quarter-million dollar research and technical service laboratory for assisting Canadian manufacturers in solving their individual finishing problems.

•

Support to Combat Bigotry Pledged By Paint and Chemicals Executives

Leading paint and chemical industries executives pledged support to programs combatting bigotry and discrimination at an annual dinner November 9th, at the Hotel Warwick, N. Y. C. The meeting was sponsored by the Joint Defense Appeal, fund-raising arm of the American Jewish Committee and the Anti-Defamation League of B'nai B'rith.

Lester Arnstein, Arnesto Paint Co. served as chairman of the JDA Paint and Chemical Division for 1954.

Others who played active parts in mobilizing industry wide support for these agencies were: Robert and William Wishnick of Witco Chemical; L. Francis Case, Central Paint & Varnish, Milford H. Corbin, Standard-Toch Chemicals Inc.; Benjamin Farber, Farnow Varnish; George Fein, Fein's Tin Can Co.; and David H. Litter, Litter Co.

Principal speakers of the evening were former state Supreme Court Justice Meier Steinbrink, and New York's Deputy Mayor Henry Epstein.

J. Harold Kolseth, left, accepting award given to Devoe & Raynolds Company, Inc., for the "Best 1953 Annual Report of the Paint and Coatings Industry." The award, given by Financial World Magazine, was presented by Weston Smith, executive vice president, at the annual Award Banquet on October 25, in the Hotel Statler in New York. Kolseth, executive vice president of Devoe & Raynolds, takes award after his company won over 5,000 other entries. The report commemorated the 200th anniversary of the company.

Development of Marine Paint Pigment Reported

A smaller barnacle bill—a reduction in the cost of keeping ship bottoms clean and smooth—may result from a recently-developed marine paint pigment, reports a recent issue of *Industrial and Engineering Chemistry.*

Improved anti-fouling protection at reduced cost has been demonstrated in extensive tests with the latest copper-based paint, states the American Chemical Society monthly. The protective pigment—cupric hydroxide—is produced by a method patented by William H. Furness, a chemist of Haddonfield, N. J. Cupric hydroxide, which gives a blue paint, may eventually replace the familiar red paint for ship's hulls, declares Mr. Furness, who is president of Copper Research, Camden, N. J. The red paint contains a different copper pigment—cuprous oxide.

Only one-sixth as much copper, when in the form of the blue pigment, appears to give the same protection as is afforded by the red pigment, according to the report. Tests with the paints, which differed only in the protective pigment used, were begun at the Marine Laboratories of the University of Miami in 1952, under the supervision of Dr. F. G. Walton Smith, who is director of the laboratories and professor of zoology. Some of the panels were painted with the blue cupric hydroxide paint and some with the red cuprous oxide paint. All panels were submerged in sea water. The reverse sides of the test panels, left uncoated for comparison, became heavily fouled, says the article, which continues:

"In the Miami tests, cuprous oxide paints began to break down by the end of the eighth month. Fouling at that stage covered from 25 to 90 per cent of the panel surface. By comparison, after one year the cupric hydroxide formulations were only slightly blistered, and exhibited fouling on only 10 to 20 per cent of the panel area."

Similar tests at Atlantic City, N. J., for 5, 6, 12 and 14 months verified the Miami studies, notes *Industrial and Engineering Chemistry,* which observes that favorable results have been reported from a two and one-half year study conducted by the British Admiralty. The United States Bureau of Ships is also studying the effectiveness of the cupric hydroxide paint.

How these antifouling paints work has not been established the article points out, but according to Mr. Furness, there are indications that cupric hydroxide acts on the attachment contact surface of the fouling organism and not by supplying a solution of copper flowing or leaching out from the paint. He questions some present theories of antifouling paint action which propose that the toxic material must be free to dissolve from the paint in order to be absorbed by (and thus kill) the attaching organism. This principle, he says, cannot apply to cupric hydroxide because it is not sufficiently soluble.

NEWS

Regulation for Paint Labeling Adopted by N. Y. C. Health Board

A regulation requiring a warning label on paint containing more than 1 per cent lead was adopted by the New York City Board of Health, Oct. 29, in a move aimed at reducing the danger of lead poisoning among small children who might nibble at a painted surface.

Scheduled to go into effect next May 1 as an amendment to the city sanitary code, the measure is expected to have much more far-reaching repercussions. This was indicated when Dr. Leona Baumgartner, city health commissioner and chairman of the city health board, expressed hope it would become a model for similar regulation by municipal and state health authorities throughout the nation.

One of the industry representatives attending the health board meeting at which the regulation was adopted was Richard J. Eckart, chairman of the National Paint, Varnish and Lacquer Association's subcommittee on model labeling. He predicted that manufacturers will now cut down the amount of lead they use and many will eliminate it altogether from their products. He told the board that many paints now in use do not contain lead.

Dr. Baumgartner declared that if the paint industry found a substitute for lead in all paint, it would prove a major step toward solving the problem of illness and death associated with lead poisoning.

•

Repeal of Coconut Oil Tax is Pressed in Trade Negotiations

A repeal of the Philippine 3 cents per pound coconut oil tax, and a revision of that country's laws which restrict the sale of U. S. paint products in the islands, was urged in briefs filed with the U. S. delegation for Philippine Trade Negotiations.

The delegation is gathering data and information with the aim of negotiating a modification of the 1946 Philippine trade act.

•

Granville M. Breinig, 65, Dies; Vice-Pres., Pratt & Lambert, Inc.

Granville M. Breinig, 65, vice president and advertising manager of Pratt & Lambert, died recently. He was appointed advertising manager in 1951 and elected to a vice presidency in the company in 1954.

Surviving are his widow, two daughters, a brother, and five grandchildren.

Cabot sales representatives attend all day meeting at Cleveland, Ohio, on Wollastonite.

Full Session Devoted by Cabot Co. To Discussion of "Wollastonite"

Wollastonite, Cabot's paint extender pigment, was the subject of an all-day meeting at the Cleveland Hotel in Cleveland, Ohio, October 6.

A full program of technical sales sessions, planned by George J. Duffy, sales manager, White Pigments Division, Godfrey L. Cabot, Inc., Boston, Mass., was attended by company sales representatives from Boston, Detroit, Cleveland, Chicago, Buffalo, Akron, Cincinnati, Pittsburgh, Montreal and Toronto, Canada. Wollastonite is a product of the Cabot Minerals Division, Willsboro, New York.

Details of plant operation were discussed, as well as the role which the product is playing in alkyd flats, latex, primers, primer surfacers, house and traffic paints.

The two grades currently being manufactured for the specific use of the paint industry are designated P-1 and P-4, but the production list will be flexible enough to include additional grades for which sufficient demand exists. The average particle sizes of P-1 and P-4 are 9 microns and 5 microns respectively, with a stir-in fineness of 1.5 N.S. and 3.5 N.S.

Highlighting the session was the distribution of a handbook, especially compiled for the use of Wollastonite salesmen, containing all of the data pertinent to the production, quality control, laboratory analysis, packaging, shipping and application of Wollastonite in the various fields of the paint industry. Plans were inaugurated for a sales program and technical service system, as part of a program for expediting technical service work.

"Minnie the Mermaid" to Make Debut at National Motorboat Show

H. W. Evans, Jr., sales manager and W. B. Hanft, advertising manager, of the C. A. Woolsey Paint & Color Co. said the company's living trademark, "Minnie the Mermaid" will be selected by marine dealers all over the country through a novel ballot-voting system conducted by Woolsey salesmen. The mermaid will be featured at local and national boat shows in which Woolsey will participate, making her "debut" at the New York National Motorboat Show in January.

•

Industrial Property Purchased in Los Angeles by Synkoloid Co.

The Synkoloid Co., water paint manufacturers of Los Angeles, Dallas and Seattle, have purchased industrial property in Los Angeles formerly owned and occupied by the Naco Company. The property has a total land area of 125,000 square feet, with 50,000 square feet of manufacturing and office space.

Barrett Div. Appoints Two New Distributors for Coating Resins

Two new regional agents have been appointed for the sale of Plaskon coating resins, according to Don Delaney, manager of coating resins sales, Barrett Division of Allied Chemical & Dye Corporation. They are, the Cary Co., of Chicago, Ill., appointed in the Chicago, South Bend, Waukegan, Rockford and Kankakee areas, and the J. H. Hinz Co., Cleveland, Ohio, appointed in the Cleveland, Toledo, Columbus and Marietta areas.

•

Scientific Instrument Exposition Held in Hartford, November 15th

The first annual Connecticut Scientific Instrument Exposition was held on November 15th at the Bond Hotel, Hartford.

Sponsored by Atlantic Precision Instrument Company, Boston, the show demonstrated hundreds of instruments useful in optical, chemical, biology, analytical, quality control, metallurgy, geology and laboratory applications.

NEWS

Simon Askin

Arthur Minich

Simon Askin Elected President Of Nuodex Products Co., Inc.

Simon Askin, president of Heyden Chemical Corp., was elected president and a director of Nuodex Products Co., Inc., manufacturers of chemical additives for the paint, plastic and other chemical process industries. He was also elected chairman of the board of Nuodex International, a wholly owned subsidiary.

The entire common stock of Nuodex was acquired by Heyden on November 1st.

Arthur Minich continues as executive vice president of Nuodex and H. V. Whelan continues as president of Nuodex International.

Four Heyden executives also were elected directors of Nuodex Products Company, Inc. in addition to Mr. Askin. They are: John P. Remensnyder, chairman of the board, Herman Sokol and Arthur Broadman, vice presidents and James K. Lindsay, secretary. Remensnyder, Askin and Lindsay were elected to the board of Nuodex International.

•

Givaudan-Delawanna, Inc., Moves To Modern Quarters in Cincinnati

The Cincinnati office of Givaudan-Delawanna, Inc., and its associate companies, Givaudan Flavors, Inc., and Sindar Corporation, has moved to new and modern quarters in The Transportation Building.

•

National Starch Establishes New Resin Laboratory in Arcadia, Calif.

A new paint laboratory has been established at Arcadia, California by the Resin Division of National Starch Products Inc.

Headed by Harry A. King, the laboratory will offer service to paint companies in Southern California. It will supplement the company's technical sales representatives in aiding paint manufacturers who use National's internally plasticized polyvinyl acetate.

Dr. George Gardner, Jos. A. Hager, Receive Heckel Paint Awards

Dr. George Gardner and Joseph A. Hager were presented recently with the George Baugh Heckel Paint Awards. They were presented by President Battley. Dr. Gardner received his award for continuous service to the industry. Hager was cited for outstanding contributions during the past year.

•

Problem of Refinishing Furniture, Silicone-Coated, May be Solved

The problem of refinishing furniture—previously coated with silicone polish—may be largely solved through new finishing procedures developed by laboratories of General Electric Company's Silicone Products Department.

According to T. H. Reilly, sales development suprevisor in the Silicone Products Department, the major difficulty has been the stubbornness of silicone residue in furniture cracks or scratches. "This silicone residue," he said, "causes defects such as craters or 'fish-eyes' in the new finishing materials being applied."

"The same chemical properties of silicones causing these defects in the finish, are those which impart outstanding performance to the original polish itself," he said.

He suggested a 3-step procedure to help eliminate this problem: Thorough cleaning of the original polished surface, involving removal of all old wax- or oil-and-silicone polish. If the general area is intact, then the surface around the actual damage must be cleaned off; Customary repair and wood preparations follow, with especial care to be taken that silicones are not accidentally spread to nearby work areas in the shop; Application of a "barrier coating" material to seal over any residual silicones in the wood which prevents the silicone from causing imperfections in the finish coatings.

For this purpose, a new "barrier coating" has been developed by G. E.'s Silicone Products Department and Hercules Powder Company's Cellulose Products Department. The barrier film may be easily applied by brush or spray. It offers protection against silicone bleed-through, and adheres firmly to the wood and the top coating of lacquer.

According to Mr. Reilly, a similar refinishing problem with silicone-polished automobiles had been encountered and solved last year.

He said that silicone polishes are enjoying increased consumer acceptance because of their ease of application, superior protection for all finishes, durability, higher gloss finish, and superior depth of gloss.

Carbola Chemical Company Forms New Company to Operate in Canada

The Carbola Chemical Co. of Natural Bridge, N. Y., has announced formation of a new company to operate exclusively in Canada. The firm operates mines and mills in the manufacture of paint extenders and mineral fillers. The new company, called Carbola Chemical Products, Ltd., is located in Kingston, Ontario. According to H. T. Koenig, secretary and treasurer of the Carbola Chemical Co., Kenneth N. Roast will continue as manager of Canadian operations. He maintains an office at Beaurepaire, Quebec.

K. N. Roast

•

Prof. Herman F. Mark Elected 1955 Polymer Chemistry Chairman

Professor Herman F. Mark, director of the Institute of Polymer Research at the Polytechnic Institute of Brooklyn, N. Y., and a world authority on polymers, has been elected chairman of the American Chemical Society's Division of Polymer Chemistry for 1955. Polymers are giant molecules of the type making up rubbers, plastics and fibers.

He succeeds Dr. Raymond M. Fuoss, Sterling Professor of Chemistry at Yale University. Raymond F. Boyer, director of the physical research laboratory of the Dow Chemical Co., Midland, Mich., has been named chairman-elect. Dr. Joseph Dec of the Johns-Manville Research Center, Manville, N. J., is secretary-treasurer.

Thomas G. Fox Jr. of the Rohm & Haas Co., Philadelphia, will represent the division in the Council of the Society, and Arthur V. Tobolsky of the Polytechnic Institute of Brooklyn will be alternate councilor.

•

New Brand Name for Odor Control Materials Taken by Van Ameringen

The Industrial Division of Van Ameringen-Haebler, Inc. of New York has announced that henceforth the name "Vandor" will be used as the brand designation on all of its industrial odor control materials. The new trademark will replace the name "Endor" which had been previously used, according to A. L. van Ameringen, president.

The company's "Vandor" odor control materials are also widely used to abate unpleasant smells in paints, rubber goods, petroleum products and many other consumer and industrial goods.

BENTONE* GELLING AGENTS IN MODERN PAINT FORMULATIONS

...one of a series of condensations from laboratory reports detailing uses of *BENTONE* 18-C and 34

NEW GELLANT IMPROVES PROPERTIES OF HIGHLY POLAR ORGANIC LIQUIDS

National Lead's recently developed *BENTONE* 18-C does for highly polar systems what *DUTCH BOY BENTONE* 34 does for low and intermediate polarity systems. Here are five out of fourteen improvements observed in organic liquids gelled with *BENTONE* 18-C.

Permits Predictable, Reproducible Bodying . . . Viscosity increases are directly proportional to *BENTONE* 18-C additions, reach maximum value immediately after proper dispersion. Their thixotropic nature is outstanding and highly desirable in protective coatings.

Betters Brushability . . . To coatings which tend to "pull" when brushed, *DUTCH BOY BENTONE* 18-C gives desirable "shortness." Many low solids content systems, such as vinyl paints and lacquers, are improved.

Improves Pigment Suspension... The *BENTONE* 18-C gel helps wet pigment particles and effectively couples free vehicle with the adsorbed vehicle. Pigment particles are coated with a gel-vehicle envelope which aids suspension and prevents agglomeration. Settling problems disappear. Hard cake is prevented. The same action helps prevent separation of vehicle or thinner from pigments in highly loaded systems. Clear systems employing flatting agents show marked improvement in pigment suspension.

Prevents Sag In Low Viscosity Paints... *BENTONE* 18-C prevents excessive sag or drain; permits development of higher viscosity, low solids coatings with maximum hiding and low dry film thickness. In doctor-blade applied coatings, it provides accurate control of "strike-through."

Package Stability Excellent... Systems bodied with *BENTONE* 18-C prove remarkably stable and predictable. Paints neither thin out nor after-body during long storage... a valuable asset.

New *BENTONE* 18-C Handbook Ready!

Properties, theory, incorporation, effects, typical formulations . . . they're all there in the new, 28-page *"DUTCH BOY BENTONE* 18-C *HANDBOOK."* Write for free copy. And if you don't yet have the *BENTONE* 34 Handbook, ask for that, too.

BENTONE 34 in Maintenance Paints Steps Up Working Properties

In mill white finishes and other maintenance paints, *BENTONE* 34 improves brushability, prevents sagging and hard settling, increases moisture resistance and film strength. By controlling penetration, it insures color and gloss uniformity, too.

Gives Non-inflammable Removers Easy-to-handle Properties

When bodied with *BENTONE* 34 to paste consistency, non-inflammable paint and varnish removers show little change in viscosity with temperature, have excellent storage stability and thixotropic characteristics. After-flow is reduced.

Dutch Boy* CHEMICALS

*"*Dutch Boy*" and "*Bentone*" are registered trademarks of National Lead Company.

NATIONAL LEAD COMPANY
111 Broadway, New York 6, N. Y.
In Canada: CANADIAN TITANIUM PIGMENTS LIMITED
630 Dorchester Street, West • Montreal

NEWS

Philip J. Griffin Retires After Twenty-Seven Years With du Pont

Philip J. Griffin has retired as manager of du Pont's finishes plant in Everett, Mass. after 27 years with the company. He has been succeeded by Karl E. Ackley, who had been assistant manager of the company's Fort Madison, Iowa, finishes plant since 1952.

Mr. Griffin had been manager of the Everett plant since 1948, and previously from 1935 to 1941. He joined du Pont in 1927 as a supervisor at the Philadelphia finishes plant, and in 1935, before coming to Everett, was a supervisor at the finishes plant in Chicago. He was manager of the Fort Madison plant for four months in 1941, and from 1942 to 1948 was manager of the South San Francisco, Calif., finishes plant.

Mr. Ackley joined the company in 1935 as a chemist at the Parlin, N.J., finishes laboratory and later was a production supervisor there. From 1942 to 1945, he was assigned to the Pompton Lakes, N. J., explosives plant in various supervisory capacities. After the war he was a supervisor at finishes plants in Flint, Mich., and Toledo, Ohio, and went to Fort Madison in March 1952, as service superintendent. He was named assistant plant manager in September of the same year.

•

Patent Issued to Cover Nuodex Super Ad-It; Mildew Preventative

United States Patent 2,692,204 dated October 19, 1954, has been issued to cover Nuodex Super Ad-It, which is used to prevent paint mildew attack. It is, according to the company, essentially a phenyl mercury compound designed to provide fungicidal protection of paint films coupled with the lack of injurious effects to people using it and side effects in the coatings where it is employed.

•

Grant Chemical Co. Appointed Distributor for Brown-Allen

Brown-Allen Chemicals, Inc., Staten Island, N. Y., has announced the appointment of Grant Chemical Co., Boston, Mass., as its exclusive sales representative for the New England area.

Donald Grant, who formed the Grant Chemical Co., will render technical assistance in the application of Brown-Allen's extensive line of specially treated vegetable and marine oils for use in paint and printing ink formulations.

Dr. Carl C. Kesler Elected Chairman Of American Chem. Society Division

Dr. Carl C. Kesler, research and development director of Penick & Ford, Inc., Cedar Rapids, Iowa, has been elected chairman of the American Chemical Society's Division of Carbohydrate Chemistry for 1955. He succeeds Dr. Nelson K. Richtmyer, principal chemist at the National Institutes of Health, Bethesda, Md.

Dr. John C. Sowden, associate professor of organic chemistry at Washington University, was named chairman-elect and Norman F. Kennedy, director of research of the Corn Industries Research Foundation, New York, was re-elected secretary-treasurer.

Chosen as members of the division's executive committee were Dr. Paul R. Shildneck of the A. E. Staley Manufacturing Co., Decatur, Ill., and Dr. Elizabeth M. Osman of the Michigan State College.

Dr. Kesler is an authority on food carbohydrates (starches and sugars) and on starches used in paper and textiles. He is credited with 50 United States and foreign patents and is the author of numerous articles in technical journals.

•

T. F. Washburn Co., and American Marietta Enter Patent Agreement

The T. F. Washburn Co., and the American Marietta Co., entered into an agreement, on November 3rd, whereby American Marietta will be licensed to manufacture polyamide modified thixotropic vehicles for their own paints under T. F. Washburn Company Patent Number 2,663,649.

Look at ALL the facts about EXTERIOR LATEX PAINTS!

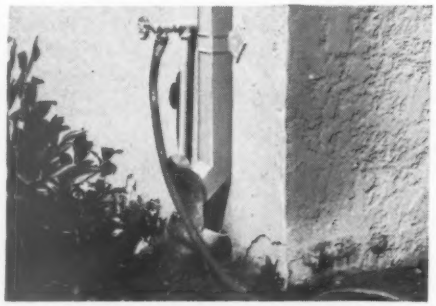
They're weatherproof, alkali-resistant, self-cleaning, let masonry breathe . . . read about these and many more of their outstanding properties, all proved by tests.

A leading western publication recently cited the four properties above as the criteria of an "ideal" masonry paint. We have years of laboratory and field tests showing that paints made with Dow Latex 512-K (styrene-butadiene) have these four . . . *and many more!*

They also have excellent packaging stability. There's no problem of settling, rusting, color loss or spoiling in the can.

They're highly resistant to rust stains as well as to alkali. Latex paints gradually chalk to provide an ideal repaintable surface. And they have the many advantages so popular in interior latex paints . . . quick drying, lack of painty odor, ease of application, fast equipment clean-up!

When you make or buy an exterior paint, we ask you first to look at all of the facts . . . facts that can be proved by actual tests. Then we're satisfied that you'll choose an exterior paint made with Dow Latex 512-K. For further information write for the booklet "Dow Latex 512-K for Exterior Latex Paints." THE DOW CHEMICAL COMPANY, Midland, Michigan, Plastics Sales Department, PL 485F.



Notice the absence of rust staining or ground stain on this styrene-butadiene latex exterior paint job. The surface stays clean and fresh and will not water-spot. The satisfied owner of this San Francisco home is proud of the beauty of long-lasting exterior latex paint.

you can depend on DOW PLASTICS

DOW

NEWS

Min ium Inventory Required For artin-Senour Color Center

Th Martin-Senour paint company, Chic o, has introduced a new Customi d Color Center which will enable a ret il dealer to feature and merchandise full line of interior and exterior colors selected from a survey of decorator color preferences and trends, according to William M. Stuart, president.

Big inventories are said to be eliminated through a mixing system which combines tube color with basic paints packaged in white or seven colors. The mixing formulas, leading up to 72 matching colors in flat wall paint and satin gloss, mainly require the adding of one tube color, and never more than two, to a packaged paint.

•

Dr. Ralph M. Hixon Wins American Chemical Society's Midwest Award

The 1954 Midwest Award of the American Chemical Society's St. Louis Section was presented to Dr. Ralph M. Hixon, dean of the graduate college at Iowa State College and a pioneer in agricultural chemistry, at a Nov. 1st dinner in St. Louis, Mo.

He was cited for his contributions to both farming and industry in the Middle West, his inspirational teaching and his "vigor, vision and resourcefulness" as an administrator at Iowa State. Fundamental studies directed by Dr. Hixon helped America meet its need for industrially important starch when foreign supplies dwindled during World War II.

•

Sell Decorating as Quality Service Paint and Decorators' Groups Told

An audience of approximately three hundred decorators and painting contractors heard Michael F. Twomey, Jr., sales promotion manager of the O'Brien Corp., talk on, "How Decorating Can Be Merchandised" at the opening day session of the 50th Annual Convention of the Illinois Painting and Decorating Contractors Association held in Moline, Ill.

The single idea in merchandising your business, Twomey said, is to sell decorating as a quality service. Quality merchandise and quality service is a distinguishing feature—one desired by people in every walk of life. Selling quality can be a successful, well-planned operation in the face of strong price competition and in the face of the drive of do-it-yourself painters.

ASSOCIATION HIGHLIGHTS

(*From page 33*)

ience. Speakers at this forum included: Dr. J. E. O. Mayne, chairman of the board and technical director of Vinyl Products Ltd, R. O. Fernald, chairman, Paint Statistics Committee, J. H. Kolseth, K. Y. Benson, and F. P. Connolly

Dr. J. E. O. Mayne

It has been estimated that during the last year five million English gallons of emulsion paint were manufactured, of which 95—98% was based on P.V.A. emulsion. Now there are at least six emulsions available in England suitable for conversion into paint and it is the object of these remarks to provide an explanation of why P.V.A. has attained such a prominent position.

The earliest emulsions available were based on oil modified alkyd resins. Paints of good washability and adhesion can be made with these emulsions, but they take a long time to dry and develop good washability; the whites are off color and during application the emulsion tends to break on the brushes or rollers, consequently organic solvents must be used to clean them; furthermore, they have a characteristic odor, particularly after application owing to the evolution of the oxidation products of drying oils.

Polyvinyl acetate paints are free from all these defects and they replaced paints based on emulsions of modified drying oils. Furthermore, because of their properties, they have retained their positions in the face of competition from other emulsions.

P. O. Fernald

Mr. Fernald reported on some of the highlights of the "National Consumer Survey of Painting Habits" which was recently made by the Statistical Div. of the National Association. He told the audience how the survey was conducted, how the survey is presented, and how the survey can be used. He then presented the consumer painting habits regarding both exterior and interior surfaces.

J. H. Kolseth

Paint gallonage has not kept pace with either the growth of population or purchasing power. Why haven't trade sales paint purchases kept pace with the total level of consumer spending? It is our product? Is the product too good, too durable, or is it an unsatisfactory value in a competitive market—or are we falling short in other ways?

In defense of our laboratories and technicians, I think that we must agree that remarkable progress has been, and is being, made in product improvement and formulation. Many of today's paints are odorless, more durable, provide easier application and clean-up, quicker drying, better one coat hide, and are available in more beautiful colors. Paint today is definitely a better product, relatively less expensive and easier to use. The advent of paint rollers has further reduced labor and assisted the inexperienced brush-hand in getting a satisfactory job.

Paint today is a better value and easier to use than most potential customers realize. However, Paint is not so durable and so good that the total potential market has contracted. Why then, isn't paint consumption larger?

The frequency of interior painting and, to a lesser degree, exterior painting is definitely a postponable maintenance decision. Whether an interior is painted every second or fourth year, an exterior every third or fifth year, will depend on a whim or a buying urge—most probably by a woman for much residential painting, or a maintenance engineer in other buildings. Even preventive plant maintenance, which minimizes depreciation and costly replacement, requires our sales efforts to overcome consumption inertia. The collective timing of such postponable maintenance and decorating decisions can conceivably make a difference of from 25% to 40% in the paint industry's annual trade paint sales.

Consumer surveys show that customers are not dissatisfied with today's paints. Further, we know that laboratory developments now in advanced stages will probably result in paints even more foolproof and more satisfactory. What is the solution? Since paint is already better and easier to

use than most potential customers realize our job is to continue to sell preventive maintenance and ease of use.

Proportionately higher application costs are sometimes given as a deterrent factor to more frequent paint use. As application costs are further reduced through one coat application and labor-saving methods, reduced application costs per square foot can minimize this factor and even improve the earnings of the professional painter.

K. Y. Benson

Let us meet this subject head on. Dealer education and training is important, but as a review, let us ask ourselves, "Why is it important?" It is important because,

1. Dealers and their salesmen learn how to take the negatives out of paint sales promotion. No longer do they say, "Come to see us about your painting problems". They say instead, "Come to see us about beautifying your home, office, factory, warehouse. Come to see us to save money".
2. The dealer is reminded that the customer is the most important person.
3. We all learn that a dealer clerk today is a dealer tomorrow, a property owner, or maybe a president of a large corporation.
4. We all learn how to satisfy customers.
5. Dealers change their store layouts—Make cleaner stores, lighter, more attractive and more colorful.
6. They learn that through related selling they prevent complaints before they happen
7. Selling technique is improved—Time is saved—Sales are made quicker, at a lesser cost per sale.
8. It builds morale, company spirit, loyalty.
9. Dealers and their staffs are convinced that they can do a better selling job, make more sales and make more money.
10. Dealers are reminded that they can sell over the telephone.
11. They learn that 6 out of 10 people are accustomed to buy on the Time Payment Plan, and that they can make both paint and painting available to their customers on convienent terms.
12. The dealer learns to cater to the painting contractor.
13. The dealer learns to cater to the Do-It-Yourselfers.
14. They learn decorative trends, color trends, sheen trends.
15. Dealers learn to promote paint and painting by director mail.
16. The dealer (sometimes) adds an outside salesman.
17. The dealer gives a more satisfactory representation for his manufacturing source.
18. Dealers learn how to increase their prestige—improve their public relations.
19. Last, and certainly not least, dealer education and training increases sales and profits for the dealer, the salesman, and the paint factory—that's us.

F. P. Connolly

Before color became a big factor in interior wall painting, it was the general trend only to paint when the walls or woodwork became dirty, and could not be scrubbed successfully. Now color is used not for utility alone, but for change. The public has been educated to change for style and not only for sanitation.

The great untapped paint market that color will bring to you is for exterior painting. You know only too well, that paint now is used more for protection, than for color, beauty, change or styling. It is our job and opportunity to promote color for exterior work.

The idea of painting the exterior of a house in bright and brilliant colors has already caught on. On a recent trip through Florida, I counted at least 50 houses done with that living and invigorating shade of the flamingo's wings.

There are new developments in the Northwest, new sections of small houses that are painted in color that were seldom used a few years ago. The colors of Easter eggs. There was a time when sections like this were painted all in white with here and there a bit of relief of color on doors or shutters.

NEW MATERIALS & EQUIPMENT

A MONTHLY MARKET SURVEY

This section is intended to keep our readers informed of new materials and equipment. While every effort is made to include only reputable products, their presence here does not constitute an official endorsement.

EPOXY ESTER RESIN

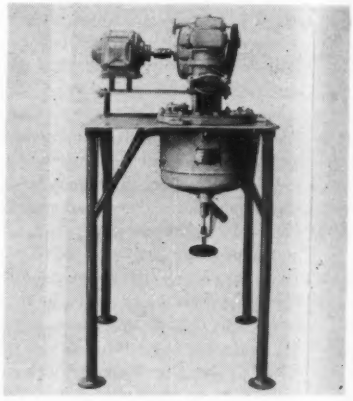
For Highly Flexible Finishes

P-786-50 Beckosol, a combination of an epoxy resin with a non-yellowing oil, is claimed by the manufacturer to impart to coatings such properties as chemical resistance, flexibility and toughness. Other characteristics include: alkali resistance, and ability to maintain light color and gloss when baked for long periods of time.

According to the producer, this resin can be used to up-grade many coatings and is compatible with short oil varnishes, most hard resins, and nearly all short modified alkyds; not compatible with nitrocellulose, raw or bodied oils, or styrenated alkyds.

Uses include the manufacture of highly flexible finishes, such as tin decorating and collapsible tube enamels, alkali-resistant coatings, and abrasion-resistant finishes.

For complete details on this epoxy-ester resin, write to Reichhold Chemicals, Inc., 525 North Broadway, White Plains, N. Y.



PATTERSON-KELLEY

PILOT PLANTS

Capacities 5 to 60 Gals.

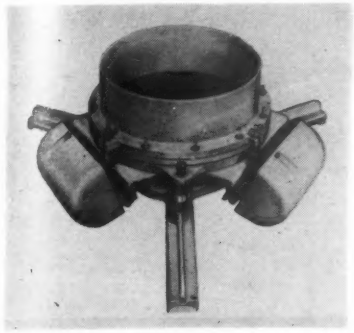
A line of reaction-distillation pilot plants ranging from 5 to 60 gallon capacities is now being offered to the processing industries. Units consist of reactor, condenser, receiver, decanter, piping, valves and instruments—all in one packaged unit. Also available are small reactors which are said to be designed for flexibility and convenience in pilot work. All units are claimed to have been field tested. Detailed information may be obtained from the Patterson-Kelley Co., Inc., East Stroudsburg, Pa.

LAB MIXING UNIT

For Quick Grinding

Manufacturer claims the following features for the H-51380 Attritor: Fine grinding rate which is

extremely rapid; a grinding operation which can be continuously observed since the grinding tank is stationary; uninterrupted grinding operation while samples are taken to be checked for pH or microscopic examination; stationary, water jacketed tank permitting temperature control; variable speed electric drive. For details write to Harshaw Scientific, Division of the Harshaw Chemical Co., 1945 East 97th St., Cleveland 6, Ohio.



SYNTRON

PAINT SIEVES

Vibrating Type

A vibrating paint sieve has been developed which the manufacturer claims provides a fast economical way to remove sand, grit, mud, rust scale, etc., not only from paint but also from dyes and other processed liquids. It is said to be constructed entirely of aluminum alloy and have a three-legged frame base to support the circular screen section. Manufacturer claims that two electric vibrators produce 3,600 vibrations per minute creating a sharp impacting screen cloth action that reduces blinding and increases the screening rate per square inch of surface area. Catalog information available from Syntron Co., Box 220, Homer City, Pa.

EPOXY RESIN VEHICLE

For Odorless Flat Paints

Two vehicles, developed specifically for use in odorless type flat wall paints, are called Epon resin "low odor" architectural paint vehicle A-300, and Epon resin "odorless" architectural paint vehicle A-301. These vehicles are said to possess many of the superior features of conventional Epon resin vehicles. Company says that both vehicles offer ease of preparation in any type of resin cooking equipment, more complete freedom from odor than is obtainable with conventional odorless vehicles, excellent working properties, leveling, non-penetration and durability. The "low odor" vehicle, having higher Epon resin content is claimed to have excellent scrub resistance, superior non-penetration and holdout, and shorter cooking time. The odorless vehicle, having higher oil content, may be preferred because of its almost complete lack of odor and somewhat lower raw material cost. Shell Chemical Co., 50 West 50th St., New York 20, N. Y.

LEVEL CONTROL

Pneumatic-Actuating

Manufacturer claims that their new Belmont Level Control utilizes an inert capacitive-type sensing probe suspended in the material to be controlled, and electronic controlled circuits which operate a pneumatic pilot valve. The resulting pressure changes, it is claimed, can either be used directly to operate a diaphragm control valve or can be fed into auxiliary automatic or manual control equipment where the pneumatic valve requires greater air volumes. The Thermo Instruments Co., 1310 County Road, Belmont, Cal.

NEW MATERIALS — EQUIPMENT

ACRYLIC RESIN
For Fast Drying Finishes

Acryloid B-66 40% is the latest in the company's family of resins. Manufacturer claims that it exhibits very fast air-drying speed and that film color and color retention are excellent even at very high temperatures. Also claimed for the product are air-dry hardness, print resistance, and hot soapy water resistance. Company instructs that coatings made from the product should be reduced with tulol, xylol or other aromatic solvents, esters, ketones or chlorinated solvents to application viscosity. Company says that product is particularly valuable in color retentive enamels for stoves, electric heaters and other applications where excellent color retention is needed. Complete data and technical sheet available from Rohm & Haas Co., The Resinous Products Div., Washington Sq., Philadelphia 5, Pa.

LIQUID METER
Explosion-Proof

Auto-Switch meter is said to feature a built-in, explosion-proof electrical switch which is actuated automatically when any desired quantity of liquid has passed through the meter. The switch can be used to turn pumps on or off, actuate solenoid valves, start agitators, or control other cycling operations by use of suitable relays, etc. The product is available either with or without the mechanically coupled Auto-Stop valve, which is also actuated by the tripping mechanism in the register. Full details are available from Neptune Meter Co., 19 West 50th St., New York 20, N. Y.

MACBETH

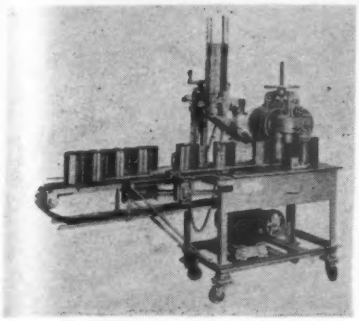
DAYLIGHT LAMP
For Color Matching

Latest product from the company, called the Industrial daylight lamp, for basic industrial color matching, is claimed to embody a completely new switching system, a new control panel and one-piece, enclosed-booth construction. The lamp comes equipped with filters, diffusing glass, volt meter, blower and motor operating control. For further information ask for bulletin 218, Macbeth Corp., P.O. Box 950, Newburgh, N. Y.

COPOLYMER RESIN
Soluble in Aliphatic Solvents

A resin which gives drying speed together with solubility in aliphatic solvents is claimed for this new copolymer resin called, Cycopol 341-17. This resin is said to respond well to small amounts of cobalt naphthenate drier. Product is suggested, by the company, for floor sealers, paper coatings, polystyrene coatings, implement enamels and traffic paints. American Cyanamid Co., Plastics and Resins Div., 30 Rockefeller Plaza, New York 20, N. Y.

NEW MATERIALS — EQUIPMENT



ELGIN

DROPPER & CAPPER

May be Coupled with Filler

Manufacturer claims that the Model "S" High Speed Cap Dropper and Capper automatically places double or triple friction plugs on cans and then securely seals the plugs in the cans. It is said to be compact requiring a minimum of space and may be easily coupled with any type filler. This new equipment was developed to accommodate long or frequent runs in all sizes from one thirty-second to and including gallons. Elgin Manufacturing Co 200 Brook St., Elgin, Ill.

META-PHENOL

With Improved Color

The company claims an improvement in the color of meta-Phenol 220 achieved through special processing. The product is said to have an initial color less than 2 Gardner, and company says it will not darken beyond 3 Gardner. The improvement in color is designed to be of special interest in the manufacture of resins and surface coatings, and in the manufacture of paint driers and vinyl stabilizers. The properties of meta-Phenols are claimed not to have been changed except that the new, light-colored material contains only traces of nitrogen bases. Removal of practically all of the nitrogen bases is important to resin manufacturers because these bases are catalytic and may have caused unwanted effects. Further information is available from Carbide and Carbon Chemicals Co., 30 East 42nd St., New York 17, N. Y.

PVA EMULSION

For Interior or Exterior Paints

A polyviny acetate emulsion will be used in formulating primer-sealers, industrial coatings, exterior masonry paints, and interior flat paints, according to the manufacturer. Called Nopco 1572-R, the emulsion is claimed to show excellent results when compounded with primer-sealers. It is said to show excellent hold-out over almost all surfaces, and dry rapidly, permitting topcoating in two hours or less. Among its industrial applications the product can be used as a coating for acoustical tile and wall board, and as a sealer of asphalt impregnated materials to prevent "bleeding" through to the topcoat. Exterior masonry paints compounded with the emulsion is claimed to show excellent weathering and color retention, since the paint films are said to "breathe," thereby permitting trapped moisture to pass out through the paint without blistering it. Good adhesion, excellent color retention, and ease of formulation are said to be further characteristics of interior paints compounded with this product. For further information write to Dept. NS, Nopco Chemical Co., Harrison, N. J.

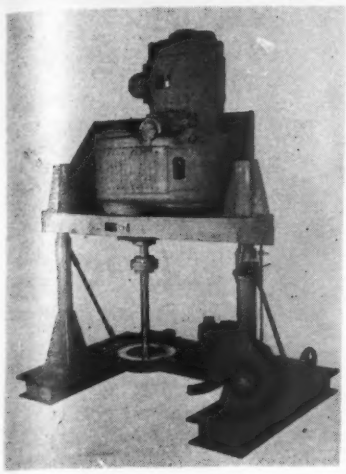
New low-cost fatty acid for premium high-bake finishes

Neo-Fat® 280 is a new raw material for quality high-bake alkyd resin finishes. It was designed by the Armour Chemical Division to parallel at lower cost the performance of present raw materials, such as commercially pure lauric acid.

This is a pure fatty acid, with less than 1% unsaturated fatty acid content. When properly formulated, applied and baked, it produces pale, uniform alkyds for use in premium white and pastel *non-yellowing* finishes. Unaffected by heat and light, resistant to greases, oil, conventional soaps, solvents and other similar chemicals, these finishes are permanently tough and flexible. And they will not embrittle or "check" on aging. These properties make finishes formulated with Neo-Fat 280 perfect for household appliances, such as refrigerators, stoves, cabinets and venetian blinds.

Specifications include a titer of 31-36°C.; iodine value of 1 max.; acid value of 275 to 281; unsaponifiable content of 0.2 max.; color, Lovibond 5¼", 1R and 10Y max. Average composition of Neo-Fat 280 is 56% myristic, 37% capric, 4% lauric, 2% palmitic and 1% caprylic. It is available in 55 gallon drums and aluminum tankcars. Write today on your letterhead for Technical Bulletin A-7, which includes suggested formulations and further information.

ARMOUR CHEMICAL DIVISION



STEVENSON

CHANGE CAN MIXER

For Rapid Dispersion

A mixer for the rapid mixing and dispersion of paints, inks, chemicals and other materials with a viscosity of up to 40,000 centipoise is claimed to have been developed.

Available in 5 to 15 hp sizes to handle tubs or cans up to 42″ in diameter, the mixer has a 15″ diameter shrouded turbine. It is a variable speed unit operating 320 to 640 rpm. The entire mixing mechanism is said to be raised or lowered electrically by a gearhead motor for the quick changing of cans. Tub clamps are operated by a small handwheel near the base of the unit. Clamps are lined with brake lining to give extra gripping power since there is a considerable amount of torque during the mixing operation. Cans can be used sitting on the floor, on pallets or small dollies.

For additional information contact The Stevenson Company, 228 N. Wilkinson St., Dayton, Ohio.

ADDITIVE

For Aluminum Paints

Until now, according to the company, conventional aluminum vehicles were limited to low acid value oils and essentially non-polar resins. Many vehicles with good durability possibilities were eliminated due to the tendency to dieleaf the aluminum. Now, the company claims, these vehicles are being used to their best advantages through the help of Raybo 41. The product is claimed to be a balanced combination of materials which combat acidity and confer poor wetting characteristics. Some of the more frequently encountered troubles involving aluminum finishes, such as loss of leafing during storage; loss of leafing when low-solvency thinners are used; dulling and the appearance of brushmarks on the aged film; livering while in storage; and dulling in acidic vehicles are said to be corrected by the product. Manufacturer claims these advantages: improved brightness; less prominent brushmarks; less aluminum needed to obtain equivalent brightness and appearance; improved shelf stability; wider range of adaptable vehicles; minimized contamination problem. For technical Bulletin 41a, write, Raybo Chemical Co., Huntington, West Va.

BORATE

For Flame Retardant Paint

A new borate, called FR-28, is being offered as a fire retardant additive for use in paints for fibrous wall board and similar surfaces. The company claims their problem was to develop a specific borate compound superior to commonly used combinations of borax and boric acid or other mechanical mixtures of borates. Such mixtures have been used satisfactorily

✓QUALITY ✓PERFORMANCE ✓VALUE

GET ALL THREE

By Choosing Crown "F" Styles

All Sizes — Quarter-Pints to Gallons. Your choice of Crown or other closures.

Get Quality — Finest Quality Containers, worthy of your product.

Get Performance — Utmost product protection. Full-color lithography that *sells.*

Get Value — The BEST for your money, PLUS a package that pays its way in merchandising your product to win customers and move your wares.

Call!...Write!...Today!

Ask any Crown Sales Representative for full details about specifications, label designs, price quotations, etc. Let Crown "F" Styles go to work for you.

CROWN

One of America's Largest Can Manufacturers

CROWN CORK & SEAL COMPANY, INC.
CROWN CAN DIVISION

PHILADELPHIA • CHICAGO • ORLANDO • BALTIMORE • NEW YORK • BOSTON • ST. LOUIS • SAN FRANCISCO

for the flameproofing of cellulosic materials but failed to give the desired results when incorporated in latex base paint compositions. Company claims that the cause of recrystallization of the borates in the film was discovered and corrected. Washability or scrub resistance, it is said, has been improved to the greatest extent that can be expected for this type of paint. Company says that during the screening process, panel after panel, coated with the different paint films, was subjected to the standard flame tests described in published specifications. Company claims the test designated in specification SS-A-118a and SS-A-118b, were passed very satisfactorily by the product. Pacific Coast Borax Co., Div. of Borax Consolidated, Ltd., 100 Park Ave., New York 17, N. Y.

BATCHING DEVISE
Automatic Type

Economies of automation are claimed to have been applied to the handling of light and heavy liquids in batch quantities through a devise known as the Fluidometer System. It consists of a Rockwell Rotocycle measuring element, a motor-operated control register and a solenoid valve. The equipment is used by manufacturers of chemicals, as well as in specialized applications such as asphalt handling. In the case of highly viscous liquids, piping, meters and valves are jacketed. Rockwell Manufacturing Co., 400 N. Lexington Ave., Pittsburgh 8, Pa.

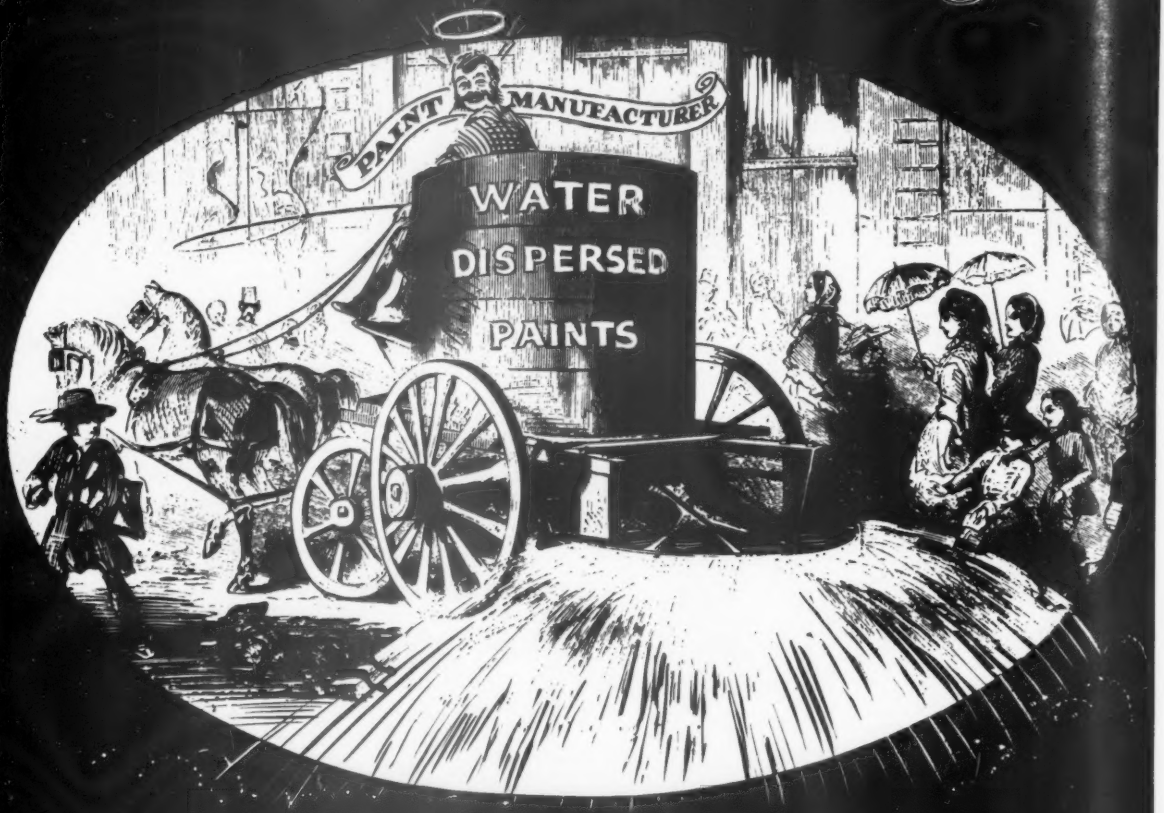
HOLIDAY DETECTOR
For High Resistance Coatings

A detector, known as the Model M-1 Holiday Detector has been recently announced for locating holidays (pin holes, voids, etc.) in thin films of relatively high electrical resistance when such films are applied to the surface of material of low electrical resistance, such as metal or concrete. According to the manufacturer, the detector is a highly sensitive device. It is provided with a bell signal to indicate the flaw, and has a dampened sponge for an exploring electrode. The detector unit is housed in a leather case with provision for attachment to the operator's belt. The method of test is said to be non-destructive having a potential of 67½ volts maintained between the electrode and the conductive surface. The instrument is portable and weighs less than three pounds. For further information write: Tinker & Rasor, P. O. Box 281, San Gabriel, Cal.

COLOR LINE
In Odorless Alkyd Vehicle

A line of flushed colors, in a long oil alkyd resin vehicle palette of 29 standards, is available for use in exterior and interior household finishes. It is designed to provide paint manufacturers with flushed color concentrates for durable "paints in oil." Manufacturer claims it is completely odorless and easy to apply. The colors are flushed in a soya bean, long-oil alkyd resin. Company says the resin was selected because it "meets all the formulating requirements of odorless finishes, yet is ideally flexible for formulating semi, high gloss and exterior sash and trim enamels with conventional mineral spirits." The Hilton-Davis Chemical Co., Sterling Drug Inc., Cincinnati, Ohio.

. . . on the water wagon?



if you don't want to fall off — you should

STOP

FLOCCULATION AND CAKING... which results in loss of gloss, hiding and color stability.

by using Clearate W.D.[1] in all water dispersed paint systems.

START

using **NILDEW AC**[2] as the preservative in P.V.Ac. paints because it is more compatible than *oil* soluble phenyl mercurials and, in near neutral systems, is more effective than salts of substituted phenols.

1. Water dispersible lecithin.
2. Water solution of phenyl mercuric acetate.

NAFTONE INC.

515 MADISON AVENUE • NEW YORK 22, N.Y.

NEWS

New Texas Pigment Plant Planned By Acheson Industries, Inc.

Plans have been made for the immediate construction of a new plant to supply polyethylene producers with dispersed pigments and carbon black at Orange, Texas, it was announced by Howard A. Acheson, president of Acheson Industries, Inc., 420 Lexington Ave., New York 17, N. Y.

The plant, to be known as Acheson Dispersed Pigments (Texas) Inc., is a corporate subsidiary of Acheson Industries. It is an extension of an operation already founded under the name Acheson Dispersed Pigments Co., of Philadelphia, and will be the fourth unit of Acheson Industries, which includes also Acheson Colloids, Ltd., Slough, Eng.

Acheson Dispersed Pigments Co., of Philadelphia will market for and generally supervise the production of the Orange plant.

According to Mr. Acheson, Orange was chosen for the expansion of the dispersed pigments business since this small section of Eastern Texas is fast becoming the polyethylene center of the world. Such producers as E. I. du Pont de Nemours & Co., Inc., Bakelite Div. of Union Carbide & Carbon Corp., Spencer Chemical Co., Monsanto Chemical Co., Dow Chemical Co., Koppers Co., and Texas Eastman, all are scheduled for new or increased production of this new plastic within the next two years. Uses of polyethylene range from flexible film to the squeeze bottle.

Officers of Acheson Industries, Inc., active in the new unit are H. A. Acheson, president; Raymond Szymanowitz, executive vice president; P. C. Buck, vice president; John C. Sprague, secretary-treasurer. Directors are H. A. Acheson, John C. Sprague, Raymond Szymanowitz, P. V. Heftler, and John P. Deringer.

•

Reichhold Produces Film: "A New Worldof Chemistry"

"A New World of Chemistry," a 24-minute film has been produced by Reichhold Chemicals, Inc. It depicts the manufacture of synthetic resins and the infinite variety of their application to daily living.

The film, in full color and black and white, is offered as a public service and is devoid of any commercial announcements.

It is available through Reichhold Chemicals, Inc., 525 North Broadway, White Plains, N. Y.

Developments in Industrial and Consumer Finishes Discussed

Latest developments in industrial and consumer finishes were discussed by Glidden Co. paint technicians and sales executives from all sections of the United States and Canada at a two-day management conference held recently at Cleveland's Hotel Carter.

Special attention at the first day's session, under the direction of T. N. Armel, national industrial sales manager, was given to Nubelite, Glidden's primary metal finish line.

Also featured were new developments in "Glidpol," polyester resins for the reinforced plastics industry, including the company's newest pigmented polyesters and "Gel-Kote."

Demonstrated were a new type of one-coat hammerloid, called "VCN," which shows advances in film control and application methods at lower cost, and a new flow-coat primer for the appliance industry said to be less expensive since it is used with common solvents and possesses excellent corrosion and alkali resistance.

A progress report was made on the development work being done on the company's "C-Oil," a paint vehicle derived from petroleum which gives promise of substantially eliminating vegetable oils from industrial paint manufacture.

The second day of the meeting, under the direction of R. B. Simpson, national trade sales manager, was devoted to the announcement of major plans for 1955 sales and promotion activities as well as the introduction of new product lines to extend Glidden's coverage of consumer and maintenance markets.

all over America it's . . .

PVO for Paint & Varnish Oils

see your local PVO representative for information

PVO OILS VARNISH PAINT & PACIFIC VEGETABLE OIL CORP.

62 Townsend Street
San Francisco 7, Calif.

3135 East 26th Street
Los Angeles 23, Calif.

SAFFLOWER
LINSEED
TUNG
SOYA
OITICICA
CASTOR
FISH

1 ATLANTA, GEORGIA
G. R. Nottingham

2 BALTIMORE, MARYLAND
W. R. McClayton & Co.

3 CHICAGO, ILLINOIS
Daniel G. Herely Co.

4 CLEVELAND, OHIO
Donald McKay Smith Co.

5 DALLAS, TEXAS
W. W. Richerson

6 DETROIT, MICHIGAN
George E. Moser & Son, Inc.

7 HOUSTON, TEXAS
Texas Solvents & Chemicals Co.

8 KANSAS CITY, MISSOURI
Ack Sales Company

9 LOS ANGELES, CALIFORNIA
California Flaxseed Products Co.

10 LOUISVILLE, KENTUCKY
B. H. Boyet & Co.

11 MILWAUKEE, WISCONSIN
J. W. Copps

12 MINNEAPOLIS, MINNESOTA
Horton Earl Co.

13 MONTREAL, QUEBEC, CANADA
B. & S. H. Thompson & Co. Ltd.

14 NEW YORK CITY, N. Y.
Garrigues, Stewart & Davies, Inc.

15 PHILADELPHIA, PENNSYLVANIA
Baker Industrial Oils Co.

16 PITTSBURGH, PENNSYLVANIA
H. E. Trench Co.

17 SAN FRANCISCO, CALIFORNIA
Pacific Vegetable Oil Corp.

18 SEATTLE, WASHINGTON
W. Ronald Benson, Inc.

19 ST. LOUIS, MISSOURI
Ivan T. Bauman Co.

20 TORONTO, ONTARIO, CANADA
B. & S. H. Thompson & Co. Ltd.

Personnel Changes

J. H. Gifford

R. B. Sucher

WITCO-CONTINENTAL

John H. Gifford and **Robert B. Sucher** have received executive appointments in the Akron, Ohio, office. Gifford has been named technical director, Carbon Black Division. Sucher has been appointed assistant sales manager, Rubber Chemical Products Promotion.

SPENCER KELLOGG

Dr. Malcolm M. Renfrew has been appointed director of research and development, according to an announcement from Howard Kellogg, Jr., president. He succeeds **Dr. Alexander Schwarcman** who established the company's research laboratories over forty years ago and will remain active in the company management in an advisory capacity. Dr. Renfrew for the last five years has been associated with General Mills and, prior to that, he spent eleven years with E. I. du Pont de Nemours & Co., Inc. He graduated from the University of Idaho where he also obtained his Master's degree. He received his Doctor's degree from the University of Minnesota in 1938.

M. M. Renfrew

GENERAL ELECTRIC

John A. Dietz has been appointed supervisor of employee relations and **James D. Bell** supervisor of production at the company's alkyd resin plant in Schenectady, according to an announcement from Arthur T. Bourgault, plant manager. Dietz has been with the company since 1934. In 1949 he was named supervisor of production, which he now leaves to take up his new assignment. Bell joined the company in 1951, and later that year was named facilities engineer.

DEVOE & RAYNOLDS

H. B. Block has been appointed director of purchases. He was formerly with Merritt-Chapman & Scott Corp. **Orville P. Moss** and **Ernst Klinger** have been appointed assistant directors of purchases. **L. G. "Buzz" Olds** has been appointed manager of Pacific Coast District Trade Sales. He has marketed paint on the West Coast for the past six years directing trade sales in the San Francisco-Oakland and Northern California areas.

MARTIN-SENOUR

Joseph Wolf has been appointed chemist for the company, according to William M. Stuart, president. He is a member of the Chicago Club of the Federation of Paint and Varnish producers.

DANIEL-LITTER

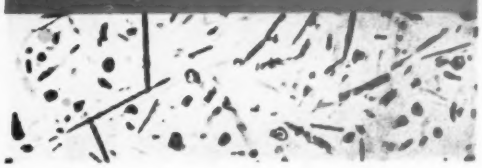
Dr. Paul Robey has been appointed senior research chemist, according to an announcement from Sidney B. Levinson, technical director. He joined the company in July of this year, and had been associated with Socony Paint Products Co., and the National Lead Co., research laboratories, before that. He is forty-seven years old and a graduate of the Vienna Polytechnic Institute. He is the holder of a number of U. S. patents in paint preparation.

Paul Robey

high

AZO ZZZ-22

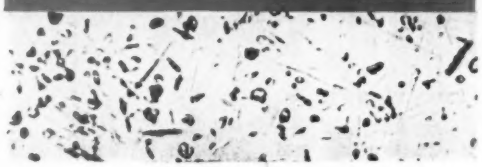
A high oil absorption Zinc Oxide having large Acicular Particles which gives heavy body



medium

AZO ZZZ-11

A medium oil absorption Acicular Zinc Oxide imparting exceptional weathering qualities to exterior paints

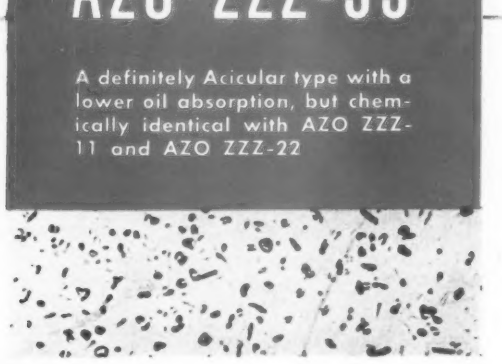


AZO acicular lead-free zinc oxide is a superior pigment available in a wide range of oil absorptions

low

AZO ZZZ-33

A definitely Acicular type with a lower oil absorption, but chemically identical with AZO ZZZ-11 and AZO ZZZ-22



AZO

UNIFORM • DEPENDABLE

AMERICAN ZINC SALES COMPANY

distributors for

AMERICAN ZINC, LEAD & SMELTING COMPANY

COLUMBUS, OHIO • CHICAGO • ST. LOUIS • NEW YORK

M. M. Gruber

W. C. Mueller

W. A. Weismann

J. J. Sellner

A-D-M

Morton M. Gruber, manager of the resin department, and **William C. Mueller,** his administrative assistant, have transferred their headquarters to the firm's executive offices in Minneapolis. They were formerly located in New York. The move is aimed at coordinating the sale of the company's alkyd resins, paint vehicles, and drying oils. **W. A. Weismann,** eastern sales manager for resins, will remain in the New York office to handle sales in that region. **James J. Sellner** has been appointed sales manager for the company's soya specialty products. He succeeds **Wilfrid B. Cox** who has resigned.

ATLAS POWDER

Edward J. Goett has been elected a director and vice president in charge of the company's Chemicals, Darco and Commercial Development Departments. **W. Clayton Lytle** was named general manager of the Chemicals Department, succeeding **Kenneth E. Mulford,** who was appointed assistant to Mr. Goett. **Max E. Colson** was named general manager of the Explosives Department, and, assisting him will be **Willis E. Collins. Harry L. Moat** has been named director of explosives production. **George W. Thompson** will serve as director of explosives sales.

AMERICAN CAN

A. O. Degling has been elected vice president in charge of purchasing and traffic, and **L. A. Britzke** has been appointed general manager of engineering, according to an announcement from William C. Stolk, president. Mr. Degling was formerly general manager of the company's engineering department. Mr. Britzke was formerly ass't general manager of engineering.

BAKELITE

Carl W. Patton has been appointed to the newly created post of general manager of advertising and public relations for the company, a Division of Union Carbide and Carbon Corporation. In 1932 he joined the corporation as a plastics research chemist with Carbide and Carbon Chemicals Company in South Charleston, W. Va. He was appointed, in 1937, to a two-year Carbide fellowship at Mellon Institute, Pittsburgh, Pa. He became associated with the plastic sales department in 1939 and for the past nine years has been manager of surface coating materials sales.

C. W. Patton

R. E. James

T. B. Gilday

COMMERCIAL SOLVENTS

Richard E. James has been assigned to the Los Angeles district office. He was formerly with Swift and Company. **Thomas B. Gilday** has been assigned to the Boston district office. He was formerly with Winthrop-Stearns and the Northeastern Resin Co. Both appointments are to the staff of the Industrial Chemicals Sales Department, according to F. E. Maple, general manager.

It's a snap

. . . to prove that
Dutch Boy Basic Silicate White Lead* **"45X"**
has what it takes
to make foolproof exterior paints

If you want to cut complaints on your exterior paints, use "lead."

Specifically, "Dutch Boy" Basic Silicate White Lead "45X"—if you'll take a tip from leading paint makers and learn more about "lead" in its most economical form.

Their widespread use of "45X" proves that it has what it takes to make foolproof exterior paints. And exposure tests at National Lead's Sayville Test Station—where many different pigments have been exposed for many years – pin this proof down scientifically.

In white House Paints, "Dutch Boy" Basic Silicate White Lead "45X" improves self-cleaning properties.

In tinted House Paints, it increases film durability and resistance to color changes.

In Primers, "45X" contributes greater adhesion, plus the water resistance to maintain the paint film's adhesive bond.

In Porch and Floor Enamels, it plasticizes the film, increases abrasion resistance, improves adhesion.

For all its adaptability, you use fewer pounds of "45X" than of other white lead types. That's because the reactive portion of each "45X" pigment particle is concentrated at the surface and, thus, proportionately larger amounts of "lead" are made available.

It's a snap to improve exterior paints with "Dutch Boy" Basic Silicate White Lead "45X." Try it in your formulations.

National Lead Company: New York 6; Atlanta; Buffalo 3; Chicago 80; Cincinnati 3; Cleveland 13; Dallas 2; Philadelphia 25; Pittsburgh 12; St. Louis 1; San Francisco 10; Boston 6 (National Lead Co. of Mass.).

*Reg. U. S. Pat. Off.

R. A. Bintz

J. L. Edwards

NATIONAL STARCH

R. A. **Bintz** has been promoted to the position of assistant director of manufacturing and is succeeded by **James L. Edwards** as plant manager in the company's facilities in Plainfield, N. J. **Russell W. Burdge** has moved up to plant superintendent, according to an announcement from A. A. Halden, executive vice president. Bintz joined the company in 1939 and has been plant manager at Plainfield since 1947. Edwards joined the company in 1938 and became plant superintendent in 1946. Burdge joined the company in 1924. He is well known for his ability in the manufacture of adhesives.

GOODYEAR

Paul A. Koons has been assigned to the Cleveland territory and **Joseph M. Donohue** to the Boston district office of the company's chemical division, according to an announcement from C. O. McNeer, general sales manager of the division. Both will service the rubber and chemical industries to meet mounting customer service requirements of rubber chemical applications.

Arvie P. Mills has been named consultant to the coatings and finishes industry in the southern states which are served by the company in Memphis. He will advise and counsel with company personnel about the use and application of pigments, resins, waxes and other raw materials, including specifics which affect drying, texture and hazing. Following his retirement in 1951, as vice president of the DeSoto Paint and Varnish Co., he became chief of the Protective Coatings Branch, Chemical Division of the National Production Authority in Washington. In this capacity he resolved all problems affecting the paint industry in the National Production Authority.

A. P. Mills

STANDARD-TOCH

Louis G. Gordon has been named sales manager of Toch Brothers Div., the oldest division of the company, according to an announcement from Milford H. Corbin, president. Joining the firm in 1930, he got his early training under the late Dr. Maximilian Toch, pioneer in the field of waterproofing compounds. Previously an executive in trade sales, he was active in launching the new Color Carousel system of dialing paint colors automatically, in retail stores, made possible by the "miracle machine" originated by the company. Plans for the expansion of the division's sales of waterproofing materials include introduction of new products, enlarging the sales force and aggressive promotion through established channels of distribution and franchised dealers.

L. G. Gordon

BLACKMER

Henry E. Graper has been appointed manager of the Ohio Valley District, which includes Ohio, Kentucky, and West Virginia. His offices will be in Springfield, Ohio. **Robert P. Cutting** has been appointed manager of the company's Newark district with offices in New York City.

For Aluminum Paints that are...

- **HIGH LUSTER**
- **GOOD LEAFING**
- **ECONOMICAL**
- **FAST DRYING**
- **EASY TO APPLY**

Specify VELSICOL RESINS AD.21 and AB11.2

Velsicol Resins AD-21 and AB-11-2 are especially suitable for economical, excellent-quality aluminum vehicles and ready-mixed aluminum paints. These neutral hydrocarbon resins are soluble in both aliphatic and aromatic naphthas, and are compatible with bodied vegetable and marine drying oils. They impart fast-drying characteristics. Solutions of the resins have high surface tension properties which promote leafing and flooding of aluminum pigment. The non-acidity of the solutions favors long leaf retentivity. AD-21 and AB-11-2 are available in either solid or solution form. For information and advice about their use, write to the Velsicol Corp. Technical Dept.

PETROLEUM DERIVED CHEMICALS
VELSICOL
SERVING BASIC INDUSTRIES

VELSICOL CORPORATION

Division of Arvey Corporation

General Offices and Laboratories
330 East Grand Ave., Chicago 11, Ill.

Foreign Division
100 East 42nd St., New York 17, N. Y.

REPRESENTATIVES IN PRINCIPAL CITIES

ACHESON

A. **T. Olsson** has been named an assistant sales manager of the company, according to Alden Crankshaw, general sales manager. He will direct his work toward supervision of the company's service engineers in the field. **G. C. Giles,** veteran assistant sales manager, will now be able to take on added administrative responsibilities.

PABCO

Dr. **Raymond H. Lester** has been appointed research director, with activities centering largely in the company's laboratories in Emeryville, Calif. **Woods Walker** has been made manager of floor covering research and **Forrest W. Price** has been appointed manager of building and industrial materials research.

KRYLON

W. R. Cantell has been appointed representative for the automotive markets in Eastern Pennsylvania, Maryland (except Allegheny and Garrett Counties), South Jersey, Delaware, Washington, D. C., and Fairfax County, Va., according to an announcement from James W. Bampton, president. **Edward J. Herter, Jr.,** has been named metropolitan New York and New Jersey representative in the hardware, paint and variety chain store fields.

BARRETT

James E. Sayre has been appointed manager of the marketing research dept. An economist with the company since 1939, he is well known for economic studies published in various journals on coal chemicals.

R. Williams

S. Bolme

RINISHED-MASON

Gerald Oven heads the applied research section which deals with all immediate and long range paint development formulation. **Ralph Williams** will act as executive assistant. **Sophus Bolme** fills the newly formed position of research specialist. The job calls for a systematic investigation of all new and promising experimental materials for use in both paint and allied products. These promotions were made to facilitate the handling of an increased volume and wider scope of paint research and development projects, according to Frederick G. Weed, president.

Gerald Oven

WITCO

Carl J. Minnig, for many years a vice-president of the company, has retired as of Oct. 1st, having reached the automatic retirement age. He is being retained as a consultant and will continue to serve his customers in the carbon black field. Since 1937 he has represented company's interests throughout the United States. Prior to that he was active in the development of new sources of gas supply to be used in the manufacture of carbon black and was instrumental in promoting the use of gas in industry. He will maintain his headquarters at the company's Akron office.

C. J. Minnig

AMERICAN CYANAMID

Dr. George L. Royer has been named administrative assistant to the company's general manager. He will coordinate policies on budgets, personnel, and publications at the division's laboratories in Stamford, Conn., Pearl River, N. Y., and Bound Brook, N. J.

FEDERATION REPORT

(*From page 35*)

He then discussed externally plasticized PVA emulsion and the PVA copolymer type. Both have good properties such as light color, good stability, self-priming properties, good adhesion, good moisture permeability and good emulsion stability. However, there may be difficulty with the externally plasticized types in which case the plasticizer may cause flushing of the organic pigment in water, and it may be necessary in the manufacture to warm the emulsion or allow aging before beginning the actual manufacturing. These problems are eliminated in the copolymer (internally plasticized) types.

WHEELER

Theoretical aspects relating to film formation of PVA paints were discussed from the standpoint that various ingredients employed in the PVA system have some influence on the mechanism of film formation. Mr. Wheeler then presented in detail the parts that emulsifiers and water play in the PVA systems.

GALLAGHER

The formulation of PVA emulsion paints covering the use and purpose of the specific components were presented.

Plasticizer—Plasticizers are used to a limited degree as compared to their use in the styrene-butadiene systems. Dibutyl phthalate or resinous type with amounts varying from 12-20% based on solids are recommended. Too little plasticizer may cause brittling and too much will cause flashing.

Pigmentation—Acetic nature of PVA emulsions prevent use of certain pigments. Zinc oxide can be used; talc is used for good bodying and as an aid in hiding; silica gives film durability and good resistance to abrasion and improves the stain removal properties; mica because of platy structure improves the brushability and flow properties; clay aids in brushability, but too much will decrease the water resistance of the film; bentonite helps in pigment suspension; calcium carbonate will improve water resistance, scrubability and stain removal properties.

Wetting Agents—Cationic types are to be avoided; non-ionic and anionic may be used but some work well only in the alkaline range.

Preservative—For materials such as casein or other materials where mildew may grow.

Protective Colloid—Used to give body to the system, improve stability, brushability, aid in grinding, etc. Polyacrylate, cellulosic compounds, casein are used extensively.

Solvents—These are used to slow up drying, increase lap time and freeze-thaw stability. Solvents such as "Cellosolve," "Carbitol," etc. are recommended.

Defoamers—May be added to grinding paste or in the "let down" phase of manufacture.

Corrosion Problems—Due to the acidic nature of PVA, lined cans are recommended for packaging; corrosion inhibitors have been used with some success.

SHERMAN

The color phase in connection with PVA paints was topic of Mr. Sherman's talk.

Exterior paints do preclude the use of certain organic pigments. One must analyze the complete paint system from the standpoint of the type of resin used (internally or post plasticized) in determining what colors will work best.

For interior colors, washability, alkaline resistance must be considered in the selection of the pigment. The problem of light fastness must also be dealt with. Generally speaking, inorganic colors have good light fastness but are lacking in brilliance and hues; whereas the organic types have poor light fastness but have good brilliance and hue.

A rundown of the various colors which can be used in exterior and interior systems were given.

LONDERGAN

Test results of exterior paint on various substrata was the subject of M. C. Londergan's talk. Mr. Londergan emphasized that the control of variables such as panel preparation, thickness of film, etc. were most important to obtain reproducible results.

Chalking—A higher percentage of rutile titanium dioxide is needed for chalk resistance in PVA paints than the amounts normally employed in the oil base paints.

General Durability—No serious defects such as checking, cracking, flaking, etc. were noted. However, high alkaline surfaces such as glazed asbestos can cause a great deal of trouble since PVA vehicles are on the acid side.

Adhesion to Metals—Self primed PVA paint shows excellent adhesion after 12 months of exposure. However, in painting over steel, a metal primer must be employed in order to avoid rusting due to the presence of water.

Adhesion over Old Paint—Loss of adhesion of PVA paints over old paint, and painted surface where excessive chalk and dirt were present was noted. Removal of excess dirt by sand blasting or wire brushing is recommended for painting such surfaces with PVA paints.

Application—Application on all surfaces seem to be very satisfactory; mileage depends on the type of surface and can vary from 175 sq. ft/gallon for porous surfaces to 700 sq. ft/gallon on smooth surfaces.

QUESTIONS AND ANSWERS

Various questions from the audience were submitted to the panel. Here are some of the important questions asked:

What kind of valve must be used for handling PVA emulsion?

Valve having a "Teflon" packing is the one recommended.

What is the best type of pump for handling PVA emulsion?

Centrifugal pump.

In storing PVA emulsion, what can be done to prevent skinning?

Keep the tank free from air circulation.

Are any precautions necessary for shipping PVA emulsion?

During cold weather, heated tank cars are recommended; however, for short runs, insulated tank cars should be satisfactory. Interior of the tanks should be stainless steel or rubber lined.

What are the best methods for removing the remaining PVA emulsion from pipe line?

Flush out with water immediately after use; or, if possible, keep pipe lines full at all times.

In the manufacture of PVA paints, what agitation speed should be used in the "let down" operation?

Slow, avoid an air sucking vortex to keep entrapped air down to a minimum.

Has there been any work on alkyd modification of PVA systems?

Alkyds have been tried with a varying degree of success. However, alkyds, generally are incompatible with PVA. It also has been reported that the inclusion of alkyds in PVA systems cause a deterioration in enamel hold-out and give poorer weatherability.

Can PVA be used on hot or green plaster?

The plaster must dry at least seven days before painting.

Can a "Spackling" compound be made with PVA?

Yes.

In formulating PVA paints, should one formulate according to the section of the country where the paint is to be used?

No, except in instances where the problem of freeze-thaw stability must be considered.

Is there any means of eliminating the staining of PVA paints, caused by certain woods?

No, except by using a primer before application. Even application of 2 and 3 coats of PVA paint is not satisfactory.

What must be done to insure the shelf stability of PVA paints?

The pH of the paint must be between 6.5-7.0. If higher, hydrolysis will take place causing an excess of hydrogen ions to be present. This will cause corrosion and ultimately effect the viscosity of the system.

PATENTS

Conducted by

Lancaster, Allwine& Rommel

PATENTS AND COPYRIGHTS

424 Bowen Building, Washington, D. C.

Complete copies of any patents or trade-mark registration reported below may be obtained by sending 50c for each copy desired (to foreign countries $1.00 per copy) to Lancaster, Allwine & Rommel.

Reflecting Coatings

U. S. Patent 2,689,191. Leopold Pessel, Springfield Township, Montgomery County, Pa., assignor to Radio Corporation of America, a corporation of Delaware.

A process of depositing a mirror-like coating on a surface of a solid object comprising applying to said surface a solution consisting essentially of a coating material selected from the group consisting of non-saponifiable hydrocarbon resins and chlorinated hydrocarbon waxes in a volatile organic solvent, permitting said solvent to evaporate thereby depositing on said surface a film consisting essentially of said coating material, and then applying a metallic film over said first-mentioned film by the process of chemical deposition comprising reducing a solution of a metal salt with a solution of a reducing agent.

Vinyl Copolymers

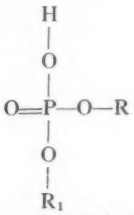
U. S. Patent 2,689,834. John W. McNabb, Cedarhurst, N. Y., assignor of one-half to American Can Company, N. Y., N. Y., a corporation of New Jersey, and one-half to Kienle and and Company, Brooklyn, N. Y., a corporation of New York.

An interpolymer of styrene and a polyester of dehydrated castor oil acids and an esterifiable glyceryl polyether of 2,2-bis (4-hydroxyphenyl) propane having alternating glycerol radicals and the hydrocarbon radicals of the phenol united in a chain by ether oxygen atoms between said radicals and having a molecular weight of about from 1400 to 1600, said polyester having said dehydrated castor oil acids and said esterifiable glycerol polyether present in an equivalent weight ratio of 1 to 2 respectively, and said interpolymer containing from 7% to 35% by weight of polymerized styrene.

Chemical Treatment

U. S. Patent 2,692,840. Ernest P. Bell, Detroit, Mich., assignor to Parker Rust Proof Company, Detroit, Mich., a corporation of Michigan.

A chemical composition for the primary treatment of the surfaces of metals of the group consisting of steel, zinc and aluminum consisting essentially of 2%-16% basic zinc chromate; 2%-16% of at least one resin selected from the group consisting of polyvinyl butyral, alkyd resins and polyamide resins, a suitable solvent therefor and 2%-20% of phosphate of the following st ucture:



wherein R is selected from the group of radicals consisting of hydrogen, ammonium and substituted ammonium and R_1 is selected from the group consisting of ammonium and substituted ammonium, the pH of said composition being from 6 to 9.

The method of forming a relatively thin coating as a paint base on a metal of the group consisting of steel, zinc and aluminum, said method comprising the steps of contacting the surface of said metal with 2%-16% basic zinc chromate, 2%-16% of at least one resin selected from the group consisting of polyvinyl butyral, alkyd resins and polyamide resins, a suitable solvent for said resin and 2%-20% of a phosphate selected from the group consisting of diammonium phosphate, guanylurea phosphate, dimorpholine phosphate, ditrimethyl ammonium phosphate, said composition having a pH between 6 and 9, to form a film having a thickness between 0.1 and 0.8 mil by reaction between the said base metal and the said composition, and subsequently drying the reaction product film.

Flameproofing Solution

U. S. Patent 2,691,594. John P. Waddington, Keyport, N. J., assignor to National Lead Co., New York, N. Y., a corporation of New Jersey.

A dilute solution adapted for imparting fire resistance to light weight cellulosic materials, comprising an aqueous solution of hydrochloric acid and a titanium chloride acylate, said acylate being selected from the group consisting of formate, acetate and propionate, said titanium being present in amount from 15 to 40 grams per liter, said acylate being present in amount from 1.0 to 4.6 grams for each gram of titanium said acylate amounting to not less than 15 nor more than 184 grams per liter,

the chloride values of said titanium chloride acylate and said hydrochloric acid being present in amount aggregating from 90 to 200 grams of Cl per liter.

Paraffin Wax

U. S. Patent 2,692,835. .Robert G. Capell, William P. Ridenour, and John A. Stewart, Pittsburgh, Pa., assignors to Gulf Research & Development Company, Pittsburgh, Pa., a corporation of Delaware.

An improved wax composition comprising a major amount of a paraffin wax and a minor amount, sufficient to inhibit development of oxidized odors and significant amounts of acidic decomposition products in the wax during contact thereof with oxygen at temperatures of as great as 180°F., for a period at least 24 hours in excess of the period of natural resistance of said wax, at the same temperature, to development of oxidized odors and significant amounts of acidic decomposition products, of an inhibitor comprising a bis (2-hydroxy-3-t-butyl-5-methylphenyl) alkane, where the alkane portion of the molecule contains not more than 2 carbon atoms, said minor amount ranging from about 0.0001 to about 0.01 per cent by weight of the composition.

Cation-Exchanges

U. S. Patent 2,692,866. .Karl Haagen, Leverkusen-Bayerwerk, Germany, assignor to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany.

The process of producing water insoluble cation-exchanging resins that are resistant to alkalies and oxygen, which comprises condensing in the presence of an acid having an $-SO_3H$ group at elevated temperature (1) an aromatic compound of the class consisting of aromatic sulfonic-acid-group-containing compounds and aromatic carboxylic-acid-group-containing compounds, said sulfonic- and carboxylic-acid-groups being the sole cation-exchanging groups in the compounds, and said compounds being capable of reacting with formaldehyde to yield high molecular water insoluble products and containing at least one etherified phenolic hydroxy radical, but substantially no free phenolic hydroxy radicals, and (2) with a molar excess of a compound selected from the group consisting of formaldehyde and formaldehyde yielding substances, continuing such condensation at least until a gel is formed, and drying the gel at an elevated temperature.

Oil Base Paint

U. S. Patent 2,692,208. .William G. Fisher, Champaign, Ill.

An additive composition for varnishes and oil-based paints consisting essentially of a mixture containing from about 0.8 per cent to about 2.2 per cent benzol, from about 1.6 per cent to about 4.4 per cent methyl alcohol, from about 0.2 per cent to about 2.2 per cent glycerine, from about 8.8 per cent to about 9.5 per cent turpentine, and from about 82.4 per cent to about 88.0 per cent pure raw linseed oil.

Modified Phenolic

U. S. Patent 2,692,865. .Thomas G. Harris, Coopersburg, Pa., assignor to Catalin Corporation of America, a corporation of Delaware.

In making a resinous composition, the method which comprises maintaining phenol in contact with formaldehyde, in the proportion of approximately 0.8 to 2.5 mols for 1 mol of the phenol, alkali and water, until condensation occurs to give a water soluble condensation product and until the content of free formaldehyde ceases to fall rapidly; then introducing into the resulting water soluble condensation product a lactone selected from the group consisting of beta-propiolactone, beta-butyrolactone, and beta-iso-butyrolactone, in the proportion of 0.1 to 1 mol of the lactone for 1 mol of the phenol used, and a water soluble alkali in amount if any required to establish the pH of the resulting mixture at a level at least as high as 4; introducing the said alkali in additional amount if any required from time to time to maintain the pH at the said level; and continuing the contact of the said condensation product, lactone and alkali until reaction in the mixture practically ceases.

Modified Melamine Resins

U. S. Patent 2,688,607. Tzeng Jiueq Suen, Stamford, Conn., assignor to American Cyanamid Company, New York, N. Y., a corporation of Maine.

A process for preparing a water soluble melamineformaldehyde resin comprising reacting at elevated temperatures melamine, formaldehyde and a compound having the general formula: NH_2 (CH_2) $_nOSO_3X$, wherein n is a whole number between 1 and 6, inclusive, and X is a member selected from the group consisting of H, Li, K, Na, NH_4 and hydrogen in combination with a water soluble tertiary amine and, wherein the mol ratios of the reactants are 1:2:0.03 to 1:5:0.5, respectively.

Silica-Containing Polymers

U. S. Patent 2,692,868. Kenneth L. Berry, Hockessin, and Paul L. Salzberg. Wilmington, Del., assignors to E. I, du Pont de Nemours & Company, Wilmington, Del., a corporation of Delaware.

A process for the preparation of silica-containing polymeric compositions which comprises heating and polymerizing at a temperature of 40° to 150°C. a polymerizable monoethylenically unsaturated monomer containing a single ethylenic double bond as the sole aliphatic carbon-to-carbon unsaturation in admixture with dried peroxysilica as the sole polymerization catalyst, the weight ratio of said peroxysilica to said polymerizable monoethylenically unsaturated monomer being 1:3 to 0.10:9.9.

Stain Preparation

U. S. Patent 2,691,596. . Herman R. Nack, Troy, and William Allshire Waldie, Dayton, Ohio, a corporation of Delaware.

As a new product, a stain consisting of 2 parts by weight of sodium carboxy methyl cellulose reacted with approximately 100 parts of water and 40 parts of saturated ferric sulfate solution, the reaction product being dissolved in tetrahydrofurfuryl alcohol containing sodium hydroxide up to about 1% by weight of said alcohol.

CALENDAR OF EVENTS

Jan. 26-28,1955. Association of American Soap and Glycerine Producers Annual Convention, Waldorf-Astoria Hotel, New York, N. Y.

Feb. 5. Ninth Divisional Conference of the Protective Coatings Div., The Chemical Institute of Canada, Ritz Carlton Hotel, Montreal, Can.

Mar. 2-5. Southern Paint and Varnish Production Club Annual Convention, Hotel Biltmore, Atlanta, Ga.

Mar. 22-24. Third Biennial Spring Symposium and Raw Materials Exhibit of West Coast Paint and Varnish Production Clubs, Statler Hotel, Los Angeles, Calif.

April 4-7. Spring Meeting of Div. of Paint, Plastics and Printing Ink Chemistry, ACS, Cincinnati, Ohio.

Production Club Meetings

Baltimore, 2nd Friday, Park Plaza Hotel.

Chicago, 1st Monday, Furniture Mart.

C.D.I.C., 2nd Monday.
Cincinnati — Oct., Dec., Mar., May, Hotel Alms.
Dayton — Nov., Feb., April, Suttmillers.
Indianapolis — Sept., Claypoll Hotel.
Columbus — Jan., June, Fort Hayes Hotel.

Cleveland, 3rd Friday, Harvey Restaurant.

Dallas, 2nd Thursday, No Fixed Place.

Detroit, 4th Tuesday, Rackham Building.

Golden Gate, Last Monday, E Jardin Restaurant, San Francisco

Houston, 2nd Tuesday, Seven Seas. Restaurant.

Kansas City, 2nd Wednesday, Pickwick Hotel.

Los Angeles, 2nd Wednesday, Scully's Cafe.

Louisville, 3rd Wednesday, Seelbach Hotel.

Montreal, 1st Wednesday, Queen's Hotel.

New England, 3rd Thursday, Puritan Hotel, Boston.

New York, 1st Thursday, Brass Rail, 100 Park Ave.

Northwestern, 1st Friday, St. Paul Town and Country Club.

Pacific Northwest, Annual Meetings only.

Philadelphia, 3rd Wednesday, Engineer's Club.

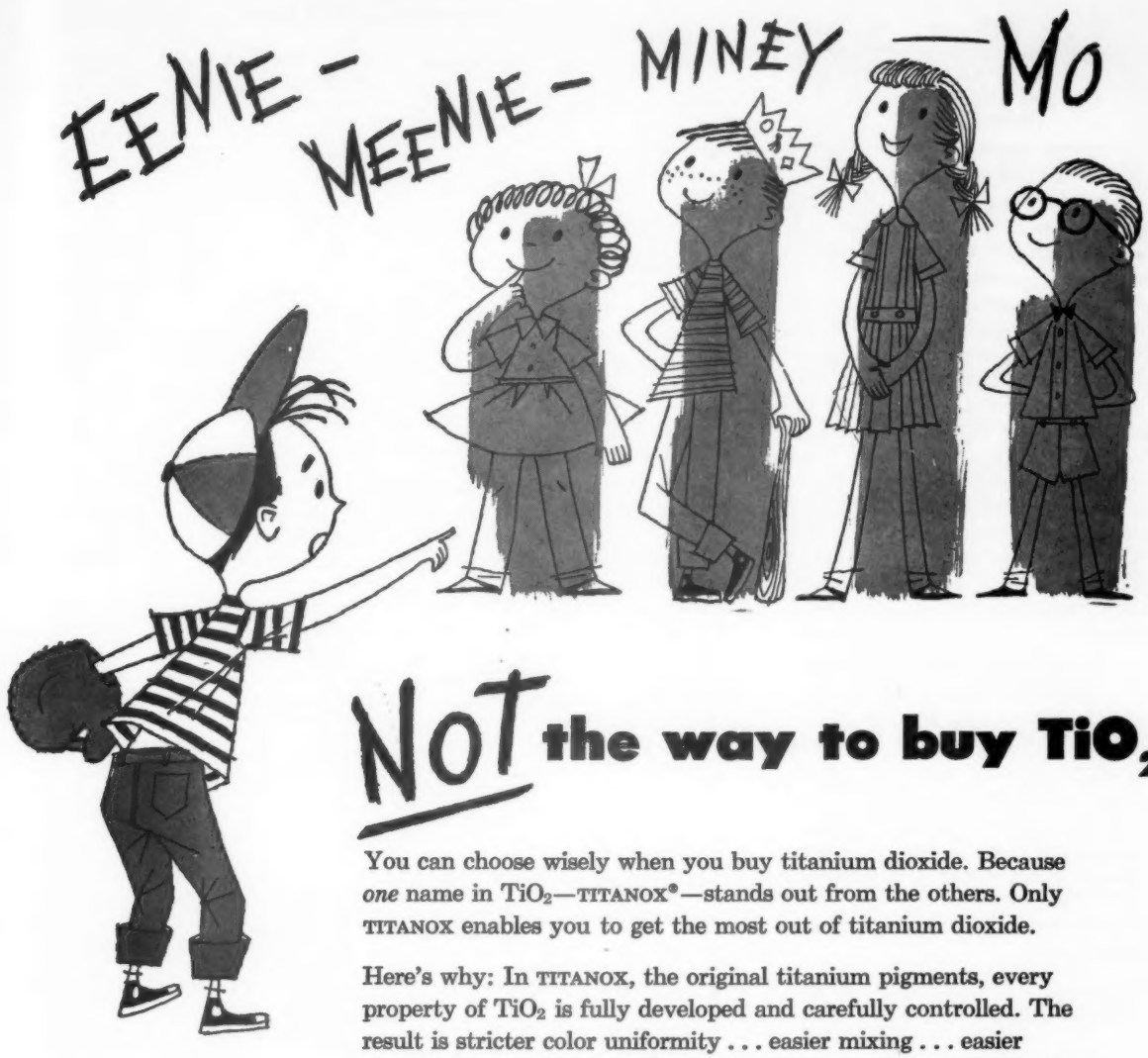
Pittsburgh, 1st Monday, Fort Pitt Hotel.

St. Louis, 3rd Tuesday, Forest Park Hotel.

Southern, Annual Meetings Only.

Toronto, 3rd Monday, Diana Sweets, Ltd.

Western New York, 1st Monday 40-8 Club, Buffalo.



NOT the way to buy TiO_2

You can choose wisely when you buy titanium dioxide. Because *one* name in TiO_2—TITANOX®—stands out from the others. Only TITANOX enables you to get the most out of titanium dioxide.

Here's why: In TITANOX, the original titanium pigments, every property of TiO_2 is fully developed and carefully controlled. The result is stricter color uniformity . . . easier mixing . . . easier grinding . . . greater opacity. In short, many of your pigmentation problems can be neatly solved with TITANOX white pigments.

Consult our Technical Service Department on the TITANOX way of solving your white pigmentation problems. Titanium Pigment Corporation, 111 Broadway, New York 6, N. Y.; Atlanta 2; Boston 6; Chicago 3; Cleveland 15; Los Angeles 22; Philadelphia 3; Pittsburgh 12; Portland 9, Ore.; San Francisco 7. In Canada: Canadian Titanium Pigments Limited, Montreal 2; Toronto 1.

® TITANOX

the brightest name in pigments

TITANIUM PIGMENT CORPORATION

Subsidiary of NATIONAL LEAD COMPANY

2347

PVA PAINTS

(*From page 27*)

cedures and combinations of materials which have shown the best compromise of properties obtained to this time. As in most work with latex coatings, the order of addition given for the various components should be followed exactly if the same result is to be obtained in consecutive batches.

In the following Formula Suggestions, while variations in quantity and order of addition must be followed carefully, the preparation of the plasticized "Bakelite" vinyl acetate resin latex and the "Cellosize" hydroxyethyl cellulose WP-300 solution is the same and suggested procedures are given below.

Preparation of Plasticized "Bakelite" Vinyl Acetate Resin Latex WC-130

Add the plasticizer to the latex slowly, with good agitation. Continue mixing for 30 minutes. Add sufficient water from formula quantity to yield a 55 per cent nonvolatile mixture and mix thoroughly. The plasticized latex preferably should be aged overnight before using.

Preparation of "Cellosize" Hydroxyethyl Cellulose WP-300 Solution

	Parts by Weight
WP-300	100
Water	1220
"Butrol"	12
	1332

Add the WP-300 to a portion of the water (8 parts water to 1 part WP-300) to produce a thick slurry. Add "Butrol" and mix the slurry vigorously for a few minutes and allow to stand overnight. Add the remaining water slowly with good agitation. Continue mixing until a uniform solution is obtained.

If an immediate supply of WP-300 solution is needed and heating is possible, the following procedure can be used. Sift WP-300 slowly into all of the water with continuous agitation. The water preferably should be preheated to 140 deg. F. Add "Butrol" and continue mixing until solution is uniform.

Formula Suggestion EF-1889
White Interior Wall Paint

FORMULA:

	Pounds	Gallons	Percentage by Weight
Titanium Dioxide (1)	214.0	6.10	19.48
China Clay	108.0	5.02	9.83
WC-130 (58.5 per cent N. V.)	274.0	29.37	24.95
Water	347.1	41.60	31.54
Dibutyl Phthalate	16.2	1.84	1.47
Ammonium Polyacrylate Solution (15 per cent N. V.)	28.9	3.28	2.63
Ethylene Glycol	26.0	2.80	2.36
"Carbitol" Solvent	18.7	2.18	1.70
"Cellosize" WP-300 Solution (7.5 per cent N. V.)	63.4	7.45	5.75
"Tergitol" Dispersant NP-35	3.2	0.36	0.29
"Daxad" 23	0.003	—	—
THEORETICAL YIELD	1099.503	100.00	100.00

(1) Rutile; semi-chalking grade; TT-T-425, Type II.

MANUFACTURING PROCEDURE:

Preparation of Pigment Paste: Charge 72 per cent of the water to a pebble mill. Dissolve the wetting and dispersing agents, add the ammonium polyacrylate solution and the ethylene glycol and mix well. Add the pigments and grind for 24 hours (1-quart pebble mill).

Preparation of the Paint: Add the various components to a paint mixer in the order given below. Agitation should be continuous during each addition and each component should be dispersed before the next is added. Pigment paste, balance of water (19.2 per cent), plasticized WC-130, "Carbitol" solvent, and "Cellosize" WP-300 solution.

PROPERTIES:

Viscosity	— 1060 cps (Brookfield, 60 rpm, #4 spindle)
Non-volatile	— 46.6 per cent
Pigment Volume Ratio	— 37.8 per cent
Freeze Stability	— Passes 3 cycles at —6 deg. F.
Weight per Gallon	— 11.0 lb.
pH	— 6.0

KAOLIN PROCESSING

(*From page 31*)

Minerals & Chemicals process patent, spray drying was accomplished with a 25-30% slurry resulting in slow and costly production. The company is licensing other concerns to use this patented Spray Drying Process.

Properties

The product, named Satin Spray, is guaranteed less than 1% moisture with never a particle which is over-dried or calcinated.

Only .0003% residue on a 325 mesh screen. 99.9997% pure.

High bulk density for efficient bagging or bulk loading.

Unusually high uniformity because of the automatic and completely closed nature of the spray drying process.

In addition to pre-dispersed Spray-Satin, there will also be produced pre-dispersed HT. Future process planning will also produce Spray-Satin an HT in un-dispersed form.

These products are used as inerts in the pigment composition of paint products, and are said to impart such properties as controlled sheen, dry, white hiding, fine suspension qualities, and reduced milling time.

A. C. Hoehne Appointed to Oilseeds and Peanut Committee

A. C. Hoehne, vice president of Archer-Daniels-Midland Company, has been appointed to the Oilseeds and Peanut Advisory Committee of the U. S. Department of Agriculture.

The committee assists in the development of research and marketing programs sponsored by the USDA.

Mr. Hoehne has been associated with the oilseed industry for over twenty years.

•

PVA Unit Being Built on Coast by Borden Company

A new polymerization unit, expected to be completed early in January, is being built by the Borden Company adjacent to its industrial adhesives plant in Dominguez, Los Angeles County, Calif. It is geared for initial production of 3,000,000 pounds of polyvinyl acetate emulsion a year for the West Coast paint industry.

According to Augustine Marusi, president of the company's Chemical Division, there has been a sharp increase in demand for emulsion-polymer-based paints. He added that polyvinyl acetate emulsions are in heavy demand on the West Coast particularly for masonry and stucco paints.

TECHNICAL Bulletins

PACKAGING

A new 30-page portfolio called, "How to Pack It," offers available new packaging ideas of interest to manufacturers.

The booklet describes and illustrates a selection of twelve different styles and more than seventy types of corrugated boxes for a variety of products. Shelf and counter, display, luggage style, "prepaks," Duplex (combination shipping and display) and a new "Hevi-Duty" box for high density products are among the boxes included in the portfolio. Descriptive copy for each box suggests proper methods of sealing, packing, and displaying.

Interested companies wanting a copy of the booklet may write to Hinde & Dauch, Sandusky, Ohio.

ORGANIC CHEMICALS

The 1955 edition of, "Physical Properties of Synthetic Organic Chemicals," has recently been issued by Carbide and Carbon Chemicals Co., a division of Union Carbide and Carbon Corp.

The 24-page booklet presents the latest data on more than 350 organic chemicals and features 46 new products available from the company.

For easy reference, the chemicals are arranged by family groups with condensed application data. Physical properties are given in tabular form. An alphabetical index is included.

Copies of the booklet, F-6136, are available without charge from the company at, 30 East 42nd St., New York 17, N. Y.

CONTROL EQUIPMENT

Minneapolis-Honeywell Regulator Co., Industrial Div., Wayne and Windrim Avenues, Philadelphia 44, Pa., has released four bulletins on their control equipment.

Specification 163-1, called, "ElectroniK Circular Chart Pneumatic Controllers," lists complete specifications for these instruments, and furnishes an up-to-date listing of the control forms available.

Specification 287-1 lists complete specifications of the "Brown Pneumatic Time-Pattern Transmitter Unit," an instrument which positions the set point indices of one or more instruments according to a definite time pattern.

Instrumentation Data Sheet No. 10.18-7 describes the use of "Baldwin SR-4 Load Cells" in conjunction with the company's ElectroniK instruments for tank, bin and hopper weighing. Design considerations and tips on instrument selection are included.

Bulletin 7201 describes the quick-connect "Tel-O-Set" miniature recorder and controller. A description of the instruments and their operation is included. Specifications are given.

COLOR-DIFFERENCE METER

A 6-page bulletin, describing both the company's automatic and manual, color-difference meter, is now available. Included is a diagram, pictures, descriptive matter, and specifications listing overall height, width, depth, and total net weight. Included also is a listing and description of exposure heads and other accessories and a price list. For Bulletin No. 156 write Gardner Laboratory, Inc., 4723 Elm St., Bethesda 14, Md.

VISCOMETER

An 8-page brochure illustrates the application of a new Swiss-made viscometer to both laboratory and in-plant process and quality control. It is built to operate in a vessel, by pass, or pipeline, at extremes of pressure, viscosity, and/or temperature.

The bulletin discusses measuring principle, manual process control, and visco-measuring plants. Also included is a section on Rheograms. Bulletin may be obtained from Drage Products, 406—32nd St., Union City, N. J.

AUTOMATIC REGULATORS

A 4-page bulletin has been issued containing illustrations and description on basic control valve types frequently used by the marine and chemical process industries and power generating facilities. Among the equipment described are spring loaded, diaphragm operated and externally controlled steam reducing valves, automatic valves for air, water, or oil and a high pressure reducing and relief valve. Copies of bulletin #2 "Atlas Regulating Devices," available from Atlas Valve Co., 280 South St., Newark 5, N. J.

BLENDERS

An 8-page folder, complete with latest model and construction features, on blenders and mixers is now available. The illustrated folder contains complete descriptions of the company's ribbon blenders and jumbo mixers, which can be used for mixing powders, pastes or liquids.

Specifications, dimensions and ordering information for all models are included, and a special section points up significant features of the equipment. For bulletin No. 800 write, The J. H. Day Co., Inc., Dept. 5, 1144 Harrison Ave., Cincinnati 22, Ohio.

FILTER

A 4-page brochure describing the operation and function of the "ClaRite" filter has just been issued. It illustrates the filter's three-step principle of precoating, filtering, and backwash cleaning. The backwash feature is claimed to eliminate manual cleaning and disassembling for replacement of internal parts. The filter is said to be applicable to the processing of a wide variety of products including acids, alcohols, solvents, plastics, and protective coatings. Copies of the brochure may be obtained from Croll-Reynolds Engineering Co., 17 John St., New York 38, N. Y.

PROCESS INSTRUMENTATION

A 12-page general catalog with illustrations, descriptions, and basic specifications of the company's complete line of process instrumentation is now available.

Instrumentation for measuring and controlling process variables includes: variable-area and variable-head flow meters; pressure; temperature; liquid level; density and specific gravity measuring; viscosity and consistency; electric, pneumatic, and electronic transmitting, recording and controlling; and air-operated control valves in various models and construction materials. Catalog 1 may be obtained by writing to Fischer & Porter Co., 172 Jacksonville Rd., Hatboro, Pa.

INDUSTRIAL TRACTORS

Bulletin 544 presents the company's "Ox" line of industrial tractors. The 4-page sheet lists specifications of Model SX-24, a standup riding type tractor, powered by a 24-volt battery. The unit has a drawbar pull of 200 pounds at 3¼ miles per hour, and a speed of 6¼ miles per hour with no load, and 3¼ miles per hour with 10,000 pounds rolling load. Specification

sheet lists information on: Type; Capacity; Speed; Batteries; Control; Acceleration; Steering; Weight; Dimensions; Wheels; Wheel Bearings; Chassis; Drive; Motor; Brake; Horn; Coupler; Fuse; Contactor; Maneuverability; Maintenance; Charging Equipment. Bulletin may be had by writing to Barrett-Cravens Co., 628 Dundee Rd., Northbrook, Ill.

WET GROUND MICA

Technical bulletin No. 18 is entitled, "The Use of Wet Ground Mica in Vinyl Acetate Co-Polymer Latex Paint—Part 1."

The bulletin has an introduction, a list of paints used and the tests given. Four tables, included under the tests, list: Color comparison of the test paints on wood; Gloss readings of paint type B on wood during 400 hours exposure to ultraviolet light in weatherometer without water spray; Washability of test type A with latex 1 (table divided into: reflective and gloss readings and removal of stains); pH of test paint during 15 days storage. A summary closes the report. Wet Ground Mica Association, Inc., 420 Lexington Ave., New York 17, N. Y.

PAINTING HABITS

A 53-page report, recently issued, is a digest of the "National Consumer Survey of Painting Habits," conducted for four months in 1953, among a panel of 10,000 families living in areas from rural farms to cities over 500,000.

The research information has been made available in order to provide authoritative statistical and marketing information to suppliers, manufacturers, wholesalers and retailers enabling them to do a better job of producing and marketing paints more efficiently.

The report details every phase of interior and exterior painting in terms of problems, costs, colors selected, frequency of painting, amount of paint, and dozens of other topics. Easy to understand graphs illustrate answers to these questions. Statistical Div., National Paint, Varnish and Lacquer Association, 1500 Rhode Island Ave., Washington 5, D. C.

ETHYL BENZENE

Ethyl benzene is described in a new 4-page technical bulletin. Information is given on physical, chemical, and physiological properties; specifications; shipping container contents; and suggested applications. Typical reactions of ethyl benzene are also described. High-purity ethyl benzene is commercially available for syntheses and solvent uses. In vinyl-type polymerizations, it promotes the formation of low-molecular-weight resins that are of particular interest as adhesives, coatings, and viscosity index improvers for lubricating oils. Copies of this bulletin, F-8596, are available from Carbide and Carbon Chemical Co., 30 East 42nd St., New York 17, N. Y.

PROCESSING EQUIPMENT

An 8-page booklet lists specifications of the company's automatic equipment for handling multi-component resin mixes on a production basis. In addition to pictures and an introduction, there is a schematic flow diagram of the company's equipment and controls. Listed are: Processing Considerations; Applications, such as, wet lay-up, dry lay-up, mat and matched die molding, casting, potting and embedment, molding or potting by vacuum and pressure injection technique, thermosetting extrusion, adhesives and sealers, decorative, protective and sealant coatings. Booklet available from Applied Engineering Associates, 1952 Flushing Ave., Brooklyn 37, N. Y.

NEWS

Industrial Finishing Exposition To be Held in Cleveland, 1955

The 1955 Industrial Finishing Exposition, a feature of the 42nd Annual Convention of the American Electroplaters' Society in Cleveland, will be held in Public Auditorium, June 20 through 23.

Cleveland is preparing for at least 12,000 people according to Eugene L. Combs of Diamond Alkali and general chairman for the Society's gathering.

An indication of the interest in the Industrial Finishing Exposition to be held in the same big auditorium with the Society's technical sessions, is the report from Harold E. Bartlett and Albert W. Erickson, from the management staff of American Decorating Company, that already more than two-thirds of the space allotted for exhibits has been taken.

Public Auditorium is just two short blocks from the city's major downtown hotels and has housed some of the nation's biggest shows, conventions and grand opera seasons.

The members of the national board of the American Electroplaters' Society met in Cleveland on October 23rd to complete plans and programs for the gathering.

The exposition itself is certain to set a new high mark in the presentation of the advancements which have been made in the science of industrial finishing. These presentations will be visited by production supervisors, engineers, chemists and purchasing men whose annual orders top a billion dollars.

The exposition committee is headed by Leon R. Westbrook, consultant, and members of his committee are in constant touch with the show management and Mr. Bartlett.

•

Florida U. Gets 6 Scholarships From Southern Paint Club

At a meeting of the advisory committee of the Southern Paint and Varnish Production Club, at Atlanta, Ga., on Oct. 29, final approval was given to a contract between the club and the University of Florida providing for six annual scholarships of $500.00 each to qualified students taking courses in Protective and Decorative coatings. Objective of the courses is to provide those students interested in the coating industry with the fundamentals of coating technology.

SUBJECT INDEX for VOLUME 44
January-December, 1954

AUTHORS' INDEX for VOLUME 44
January-December, 1954

ADVERTISERS' INDEX

NOW! a fast drying copolymer resin

in VM&P NAPHTHA

Cycopol® 341-17

CYCOPOL Resin 341-17 offers drying speed with solubility in aliphatic solvents.

Suggested Applications:

- traffic paints
- floor sealers
- paper coatings
- polystyrene coatings
- implement enamels

The resin responds well to small amounts of cobalt naphthenate driers. For example – with the addition of 0.01% cobalt metal, based on the nonvolatile resin, 3 mil wet films of CYCOPOL 341-17 dry tack free in 15 minutes and develop good overnight hardness.

Write today for complete information or samples. A Cyanamid Technical Service Representative will be glad to call on request.

QUALITY • UNIFORMITY • SERVICE
assured by
intensive research, rigid control, prompt delivery

AMERICAN Cyanamid COMPANY
PLASTICS AND RESINS DIVISION
30 Rockefeller Plaza, New York 20, N. Y.

In Canada: North American Cyanamid Limited, Toronto & Montreal

How HYDRITE Kaolinites affect GLOSS

in Butadiene-Styrene Copolymer Latex Paints

During the past few years HYDRITE Kaolinites have become the most important pigment extenders used in water-based paints. This is due to the unique combination of desirable properties they exhibit during paint production and use.

These valuable properties spring from the fact that, as HYDRITE particles change in *size*, they also change in *shape*. Finer than 2 microns they occur as hexagonal lamellar plates—coarser, they appear as stacks of these plates firmly cemented together (see graph below).

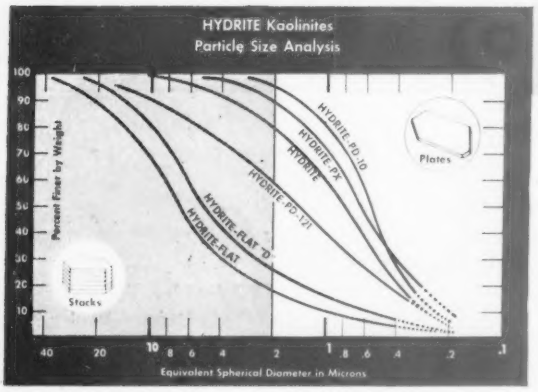
The effects of particle size distribution on gloss of a butadiene-styrene copolymer latex paint are clearly shown in the graph at right.

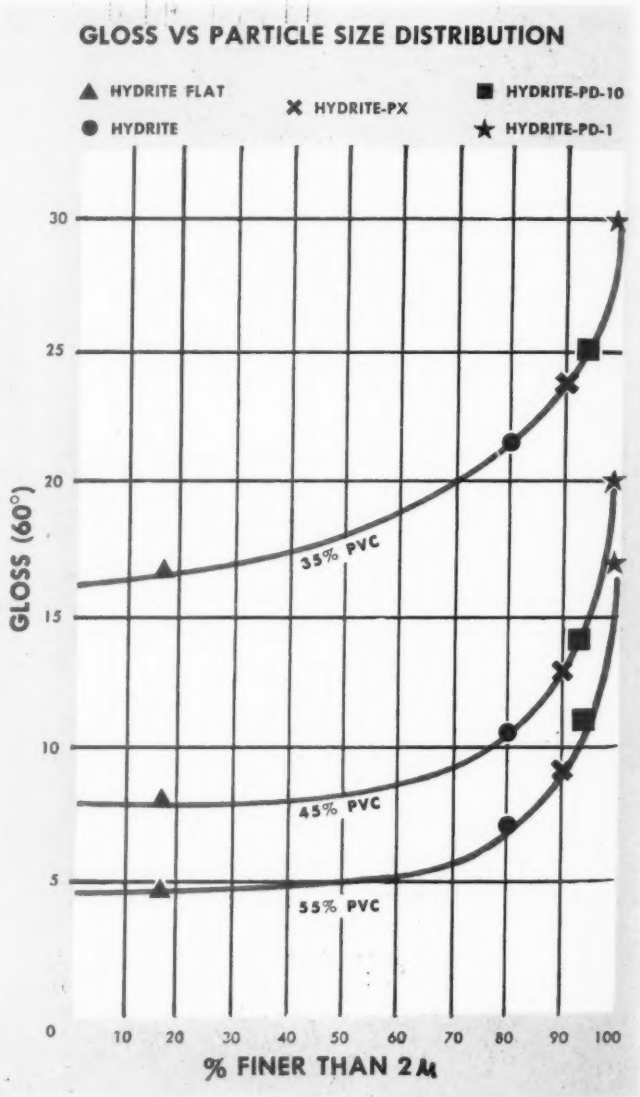
This graph is based on 3 experimental formulas at 35, 45 and 55% PVC, using HYDRITE Kaolinites ranging in particle size from 4 to 100% finer than 2 microns. The amount of prime hiding pigments used in these formulas was held constant, only the kaolinite content being varied to effect the differences in PVC.

The pronounced effect of kaolinite particle size on gloss can readily be seen from the graph. Note especially the magnitude of this effect as the plate content of the kaolinite used exceeds 80%.

This graph indicates the possibilities of using HYDRITE Kaolinites as aids in controlling gloss in butadiene-styrene copolymer latex paints. Further details are given in our Technical Service Bulletin TSBH-11.

Send for it.





GEORGIA KAOLIN COMPANY

435 North Broad Street, Elizabeth, N. J.